HRGreen

To: Steve Gramm, SDDOT

From: Chase Cutler, PE, PTOE / Ben White, PE

Subject: SD Highway 38 - Existing Traffic and Operations Analysis

Date: April 20, 2023

Introduction

The South Dakota Department of Transportation (SDDOT), City of Hartford, Town of Humboldt, City of Sioux Falls, Sioux Falls Metropolitan Planning Organization (MPO), Minnehaha County, and Federal Highway Administration (FHWA) initiated an assessment of approximately 14.2 miles of the SD Highway 38 (SD 38) corridor from the SD Highway 19 intersection in Humboldt, South Dakota to the Marion Road intersection in Sioux Falls, South Dakota. The study segment of SD 38 is predominantly a rural two-lane highway and located in a rapidly developing area and serves as a viable alternate route to Interstate-90. Development pressure is expected to impact the SD 38 corridor with higher traffic volumes, greater demand for multi-modal (bike and pedestrian) uses, and additional access management concerns.

Segments of the SD 38 corridor are expected to need major rehabilitation or reconstruction within the next 10 to 15 years. Primary concerns of this study are to ensure the roadway is reconstructed to meet future traffic volume demands.

The purpose of this technical memorandum is to document the existing conditions traffic assessment in support of the study being completed along SD 38. This technical report will provide an existing conditions assessment of the two-lane highway and at each of the study intersections. **Table 1** depicts the eighteen study intersections reviewed as part of the existing conditions assessment and traffic data review.

TABLE 1: SD 38 STUDY INTERSECTIONS

Main Line	Cross Street(s)
SD Highway 38	SD Highway 19 / 457th Avenue
SD Highway 38	459th Avenue
SD Highway 38	I-90 Speedway Entrance
SD Highway 38	Western Avenue / 463rd Avenue
SD Highway 38	Main Avenue
SD Highway 38	Vandemark Avenue
SD Highway 38	2nd Street
SD Highway 38	West Central High School Entrance
SD Highway 38	Railroad Street / 464th Avenue
SD Highway 38	Mickelson Road/260th Street
SD Highway 38	466th Avenue (North)
SD Highway 38	WB I-90 Exit 390
SD Highway 38	EB I-90 Exit 390
SD Highway 38	466th Avenue (South)
SD Highway 38	County Highway 141 / 468th Avenue
SD Highway 38	County Highway 139 / 469th Avenue
SD Highway 38	La Mesa Drive / 470th Avenue
SD Highway 38	Marion Road

Existing Conditions

The study area was reviewed in an effort to get an accurate reflection of the traffic operations experienced on a daily basis. This included a review of the local roadways, land uses, and traffic volumes.

Existing Roadways

The existing roadway within the study area consists of a 14.2 mile stretch of SD Highway 38 along with 18 intersections with county roads, interstate ramp terminals, and local roads. See **Figure 1** for a depiction of the existing road network within the study area.

SD Highway 38 is a state highway that carries a functional classification of collector between Humboldt to Hartford and a federal functional classification of minor arterial between Hartford to Sioux Falls. It runs east/west through South Dakota between the cities of Mitchell and Sioux Falls. Within the study limits, the SD 38 corridor extends from the SD Highway 19 intersection, east of Humboldt, passes through the City of Hartford and ends at the Marion Road intersection, west of Sioux Falls. The posted speed limit on SD Highway 38 ranges from 65 mph to 35 mph.

The study segment of SD 38 exists primarily as a two-lane rural cross-section with paved shoulders. However, within the City of Hartford the roadway contains an urban cross section with curb and gutter, and street lighting between the intersection of SD 38 & 463rd Avenue and SD 38 & Vandemark Avenue. The SD 38 & I-90 Exit 390 interchange is a folded diamond interchange with stop-controlled ramp terminal intersections.

FIGURE 1: LOCATION FEATURES

There are a total of eighteen study intersections within the study limits including seventeen stop-controlled intersection and one traffic signal-controlled intersection. The pedestrian accommodations within the study area include marked crosswalks at five intersections within the City of Hartford including the study intersections of SD 38 & Vandemark Avenue, SD 38 & 2nd Street, SD 38 & West High School Entrance, and SD 38 & Railroad Street. Additionally, there are marked pedestrian crosswalks and pedestrian signal heads with pushbuttons at the intersection of SD 38 & Marion Road. Aerial views of pedestrian crosswalks can be seen in **Appendix A**.

Existing Land Use

The study area consists of predominantly agricultural land along the SD Highway 38 corridor with a varied mix of residential, commercial, and industrial land uses within the Town of Humboldt, the City of Hartford, and the City of Sioux Falls. **Figure 2** illustrates the current Minnehaha County land uses within the study area.

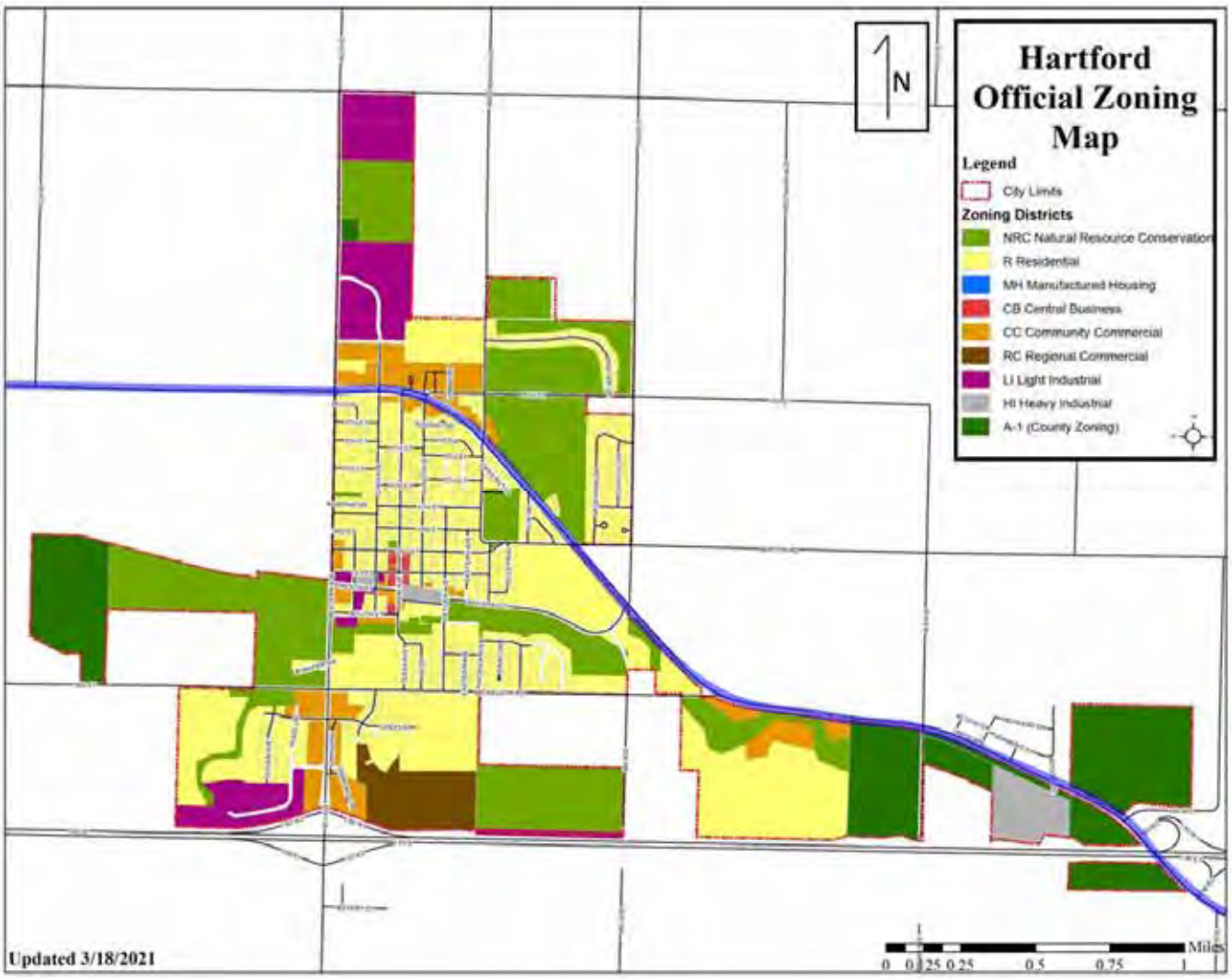
The Town of Humboldt depicts land use adjacent to the SD 38 study corridor, near the intersection with SD 19, as commercial in the southwest quadrant and single family residential elsewhere, with agricultural land use along SD 38 to the east.

There are a number of commercial and industrial businesses clustered near the I-90 Exit 390 interchange and there is conservation land and rural residential designated land use along SD 38 southeast of the interchange.

FIGURE 2: EXISTING MINNEHAHA COUNTY LAND USE (ENVISION 2035)

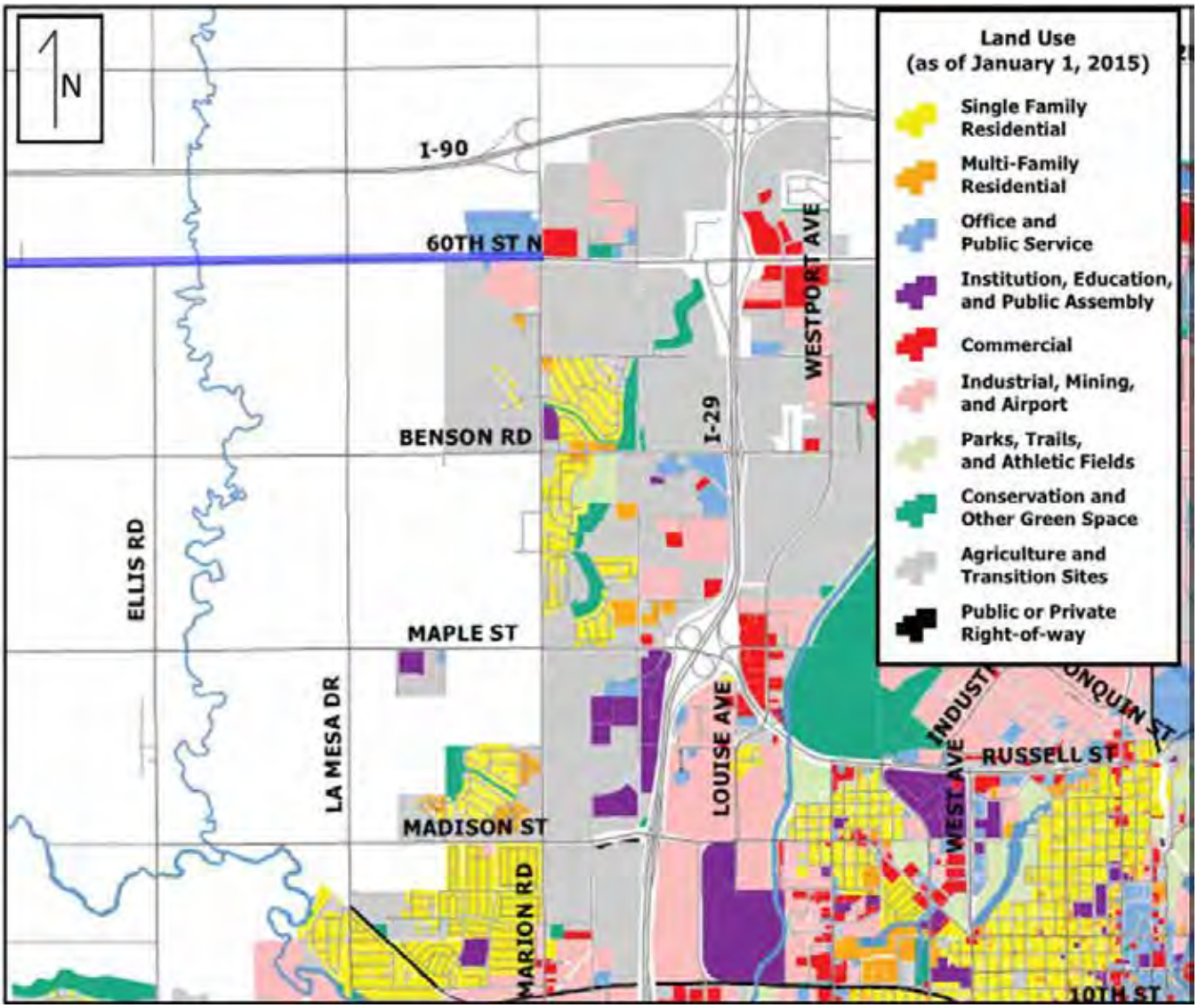
Through the City of Hartford, land uses along the SD 38 corridor include residential, commercial, natural resource conservation, and heavy industrial land uses. **Figure 3** depicts the current City of Hartford land use adjacent to the SD 38 study corridor.

FIGURE 3: EXISTING CITY OF HARTFORD LAND USE (CITY ZONING MAP)



The City of Sioux Falls municipal limits extend through the intersection of SD 38 & Marion Road. Land use adjacent to that intersection include office and public service, commercial, inductrial land use, and agricultural. **Figure 4** depicts the current City of Sioux Falls land use adjacent to the study corridor.

FIGURE 4: EXISTING CITY OF SIOUX FALLS LAND USE (SHAPE SIOUX FALLS 2040)

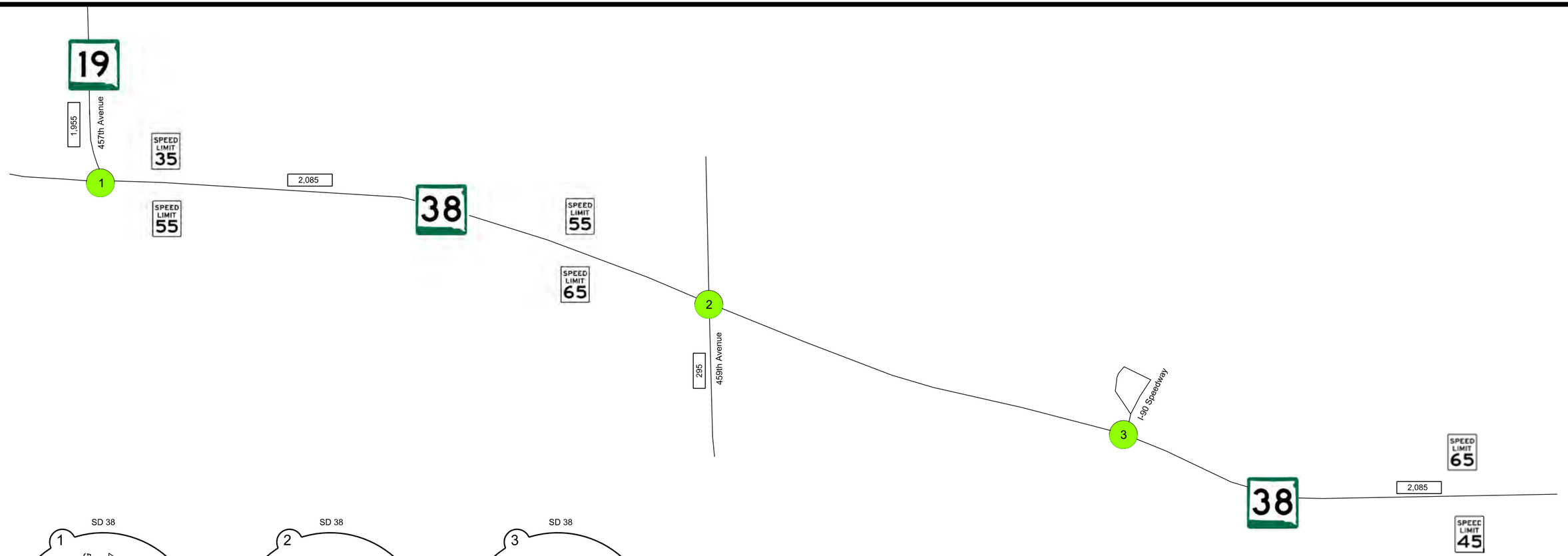


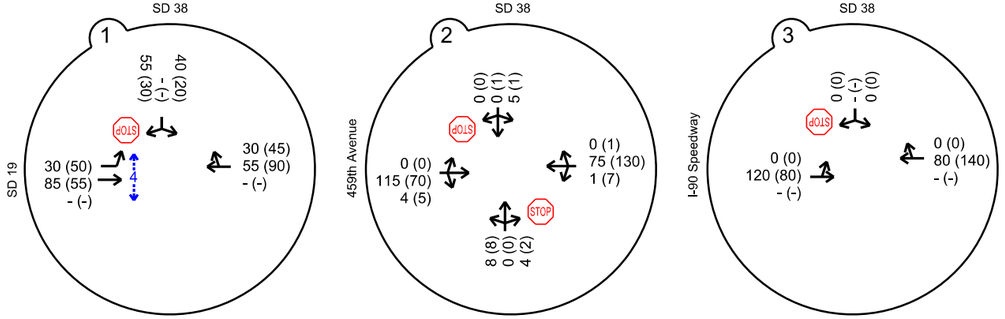
Existing Traffic Data

Traffic volume data was collected at 18 study intersections along the SD 38 corridor on November 2, 2022, for a 12-hour period (7:00AM to 7:00PM). The count data included turning movements by approach in 15-minute intervals with composition of passenger vehicles and trucks. The intersection of SD Highway 38 & the I-90 Speedway Entrance has been scheduled for additional data collection in spring 2023 to account for event traffic at the raceway.

Review of the traffic volume data revealed distinct AM and PM peak hour periods at each intersection. The peak hour periods at each intersection were then comparatively judged to determine the peaking period of the corridor. It was determined that the AM peak hour occurred between 7:15-8:15 AM and the PM peak hour period occurred between 4:45-5:45 PM. See **Figure 5** for the AM and PM peak hour turning movements at each intersection.

Hourly distribution of traffic at intersections along the SD 38 corridor were examined to determine the characteristics exhibited at each intersection approach leg throughout a typical day. The peaking characteristics of the study corridor are also evident in the hourly traffic distribution data with a distinctive AM and PM peak hour. The hourly distribution at each intersection approach leg can be seen in **Appendix A**.





INTERSECTION PEAK HOUR OPERATIONS

ID	INTERSECTIONS	CONTROL TYPE: SIGNAL	CONTROL TYPE: STOP	HCM 7TH EDITION LEVEL OF SERVICE: AM	HCM 7TH EDITION LEVEL OF SERVICE: PM
1	SD Highway 38 & SD Highway 19 / 457th Ave		X	A	A
2	SD Highway 38 & 459th Ave		X	A	B
3	SD Highway 38 & I-90 Speedway		X	A	A

NOTES: TWO-WAY STOP CONTROL LOS REPRESENTATIVE OF WORST CASE STOP CONTROLLED APPROACH.
* DENOTES V/C RATIO > 1

LEGEND

XX,XXX — 2022 AVERAGE DAILY TRAFFIC VOLUME (ADT)

XXX (XXX) — AM (PM) PEAK HOUR VOLUME

AM / PM — INTERSECTION LEVEL OF SERVICE

A | B | C | D | E | F

STOP — STOP CONTROL

XX (XX) / XXX (XXX) / XX (XX) — TURNING VOLUME BY MOVEMENT AND LANE CONFIGURATION

<-- X--> — PEDESTRIAN VOLUME ON APPROACH (IF PRESENT)

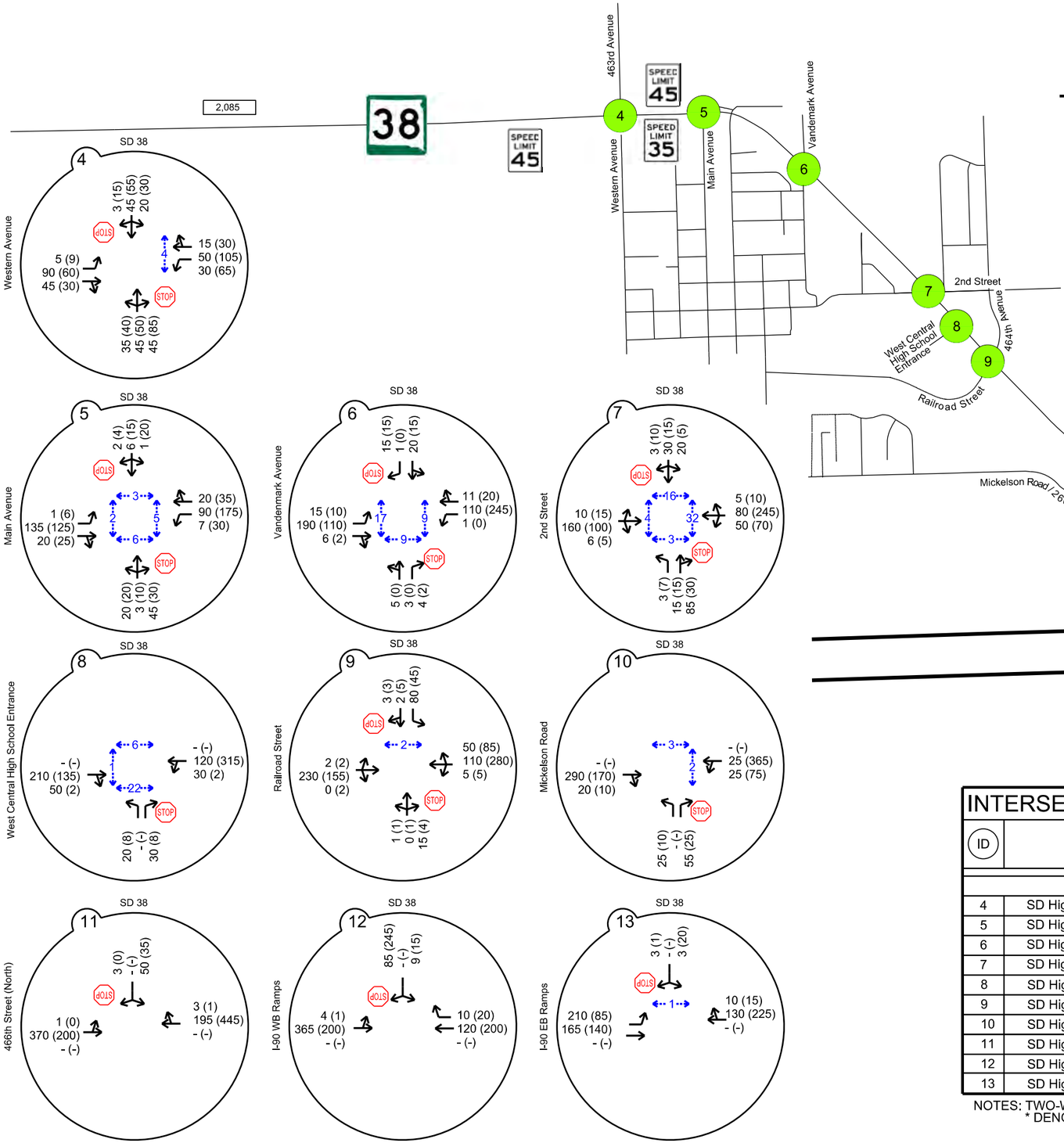
NORTH

NOT TO SCALE

SD HIGHWAY 38 TRAFFIC STUDY
EXISTING CONDITIONS
SD 38 CORRIDOR
MINNEHAHA COUNTY, SOUTH DAKOTA

FEB 2023

FIGURE 5



LEGEND

XX , XXX — 2022 AVERAGE DAILY TRAFFIC VOLUME (ADT)

XXX (XXX) — AM (PM) PEAK HOUR VOLUME

AM / PM — INTERSECTION LEVEL OF SERVICE

A | B | C | D | E | F

STOP — STOP CONTROL

XX (XX) / XXX (XXX) / XX (XX) — TURNING VOLUME BY MOVEMENT AND LANE CONFIGURATION

<-- X --> — PEDESTRIAN VOLUME ON APPROACH (IF PRESENT)

INTERSECTION PEAK HOUR OPERATIONS

ID	INTERSECTIONS	CONTROL TYPE: SIGNAL	CONTROL TYPE: STOP	HCM 7TH EDITION LEVEL OF SERVICE: AM	HCM 7TH EDITION LEVEL OF SERVICE: PM
4	SD Highway 38 & Western Ave / 463rd Ave		X	A	A
5	SD Highway 38 & Main Ave		X	C	B
6	SD Highway 38 & Vandemark Ave		X	A	B
7	SD Highway 38 & 2nd St		X	B	C
8	SD Highway 38 & West High School Entrance		X	B	B
9	SD Highway 38 & Railroad St / 464th Ave		X	B	B
10	SD Highway 38 & Mickelson Rd / 260th St		X	B	B
11	SD Highway 38 & 466th St (North)		X	B	B
12	SD Highway 38 & Westbound Interstate-90		X	B	B
13	SD Highway 38 & Eastbound Interstate-90		X	B	B

NOTES: TWO-WAY STOP CONTROL LOS REPRESENTATIVE OF WORST CASE STOP CONTROLLED APPROACH.
* DENOTES V/C RATIO > 1

NORTH

NOT TO SCALE

SD HIGHWAY 38 TRAFFIC STUDY
EXISTING CONDITIONS
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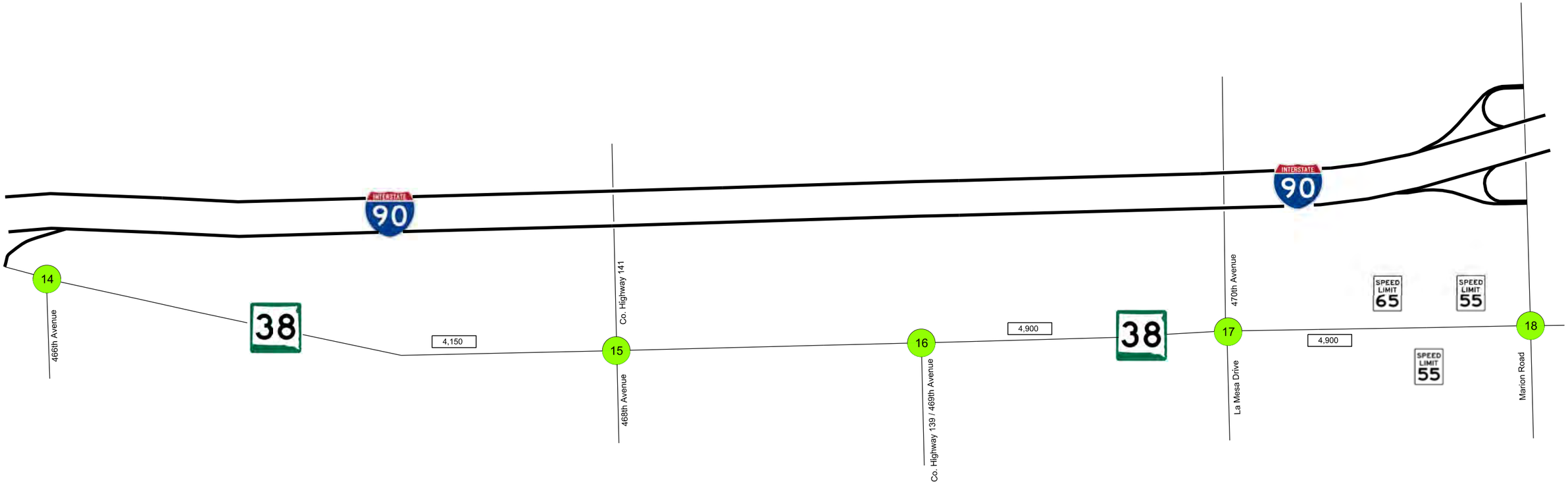
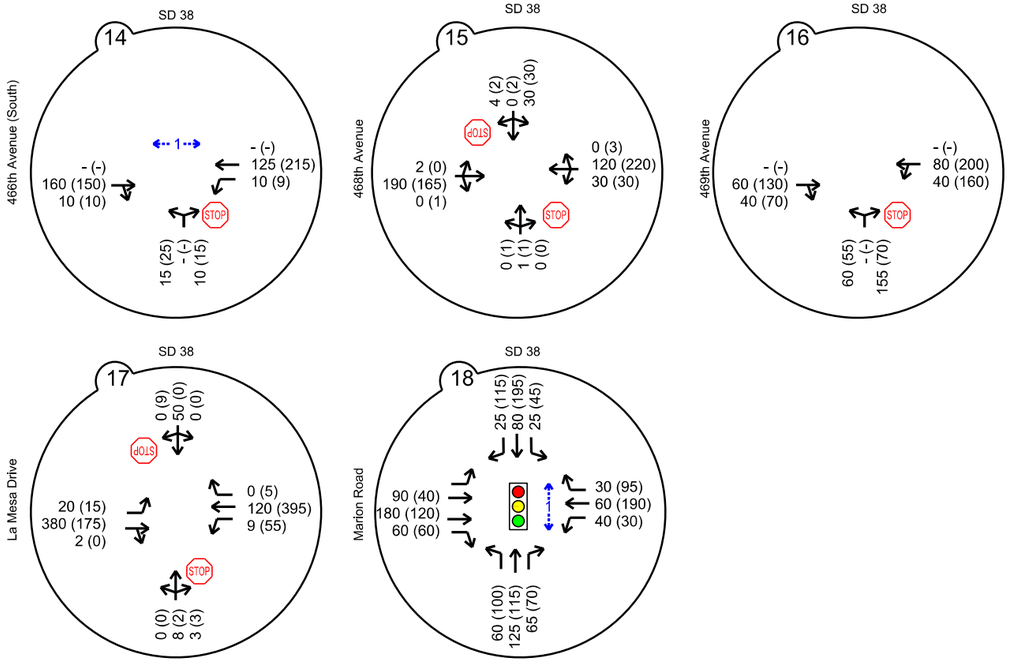
MINNEHAHA COUNTY, SOUTH DAKOTA

FEB 2023
FIGURE 5
PAGE 8





INTERSECTION PEAK HOUR OPERATIONS

ID	INTERSECTIONS	CONTROL TYPE: SIGNAL	CONTROL TYPE: STOP	HCM 7TH EDITION LEVEL OF SERVICE: AM	HCM 7TH EDITION LEVEL OF SERVICE: PM
14	SD Highway 38 & 466th Ave (South)		X	B	C
15	SD Highway 38 & Co. Hwy 141 / 468th Ave		X	B	B
16	SD Highway 38 & Co. Hwy 139 / 469th Ave		X	B	B
17	SD Highway 38 & La Mesa Drive / 470th Ave		X	B	C
18	SD Highway 38 & Marion Drive	X		B	B

NOTES: TWO-WAY STOP CONTROL LOS REPRESENTATIVE OF WORST CASE STOP CONTROLLED APPROACH.
* DENOTES V/C RATIO > 1

LEGEND

XX,XXX — 2022 AVERAGE DAILY TRAFFIC VOLUME (ADT)

XXX (XXX) — AM (PM) PEAK HOUR VOLUME

AM / PM — INTERSECTION LEVEL OF SERVICE

A | B | C | D | E | F

STOP — STOP CONTROL

XX (XX) / XXX (XXX) / XX (XX) — TURNING VOLUME BY MOVEMENT AND LANE CONFIGURATION

<-- X --> — PEDESTRIAN VOLUME ON APPROACH (IF PRESENT)

NORTH

NOT TO SCALE

SD HIGHWAY 38 TRAFFIC STUDY
EXISTING CONDITIONS
SD 38 CORRIDOR
MINNEHAHA COUNTY, SOUTH DAKOTA

FEB 2023

FIGURE 5

Existing Traffic Operations

Intersection level of service (LOS) is primarily a function of peak hour turning movement volumes, intersection lane configuration, and traffic control. For intersection analysis, the Highway Capacity Manual (HCM) defines LOS in terms of the average control delay at the intersection in seconds per vehicle. Two-lane highway LOS is primarily a function of the roadway configuration, vehicle speeds, and availability of passing opportunities. For two-lane highway analysis, the HCM defines LOS in terms of the following density or the number of vehicles in a follower state per mile per lane. The results of a HCM analysis are typically presented in the form of a letter grade (A-F) that provides a qualitative estimate of the operational efficiency or effectiveness of the corridor. Much like an academic report card, LOS A represents the best range of operating conditions (i.e., motorists experiencing little delay or congestion) and LOS F represents the worst (i.e., extreme delay or severe congestion).

Table 2 defines the control delay range corresponding to each LOS for unsignalized and signalized intersection locations. At intersections, LOS E is considered to be at capacity and typically represents a scenario in which significant queuing is present or traffic signal cycle failure is evident. For unsignalized intersections, the intersection LOS is given by the worst approach LOS. For instance, an intersection with LOS D on one approach and LOS B on the rest would result in LOS D for the intersection.

TABLE 2: LEVEL OF SERVICE FOR CONTROL DELAY (INTERSECTIONS)

Level Of Service	Unsignalized	Traffic Signal
	Control Delay (sec/veh)	Control Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 and ≤ 15	> 10 and ≤ 20
C	> 15 and ≤ 25	> 20 and ≤ 35
D	> 25 and ≤ 35	> 35 and ≤ 55
E	> 35 and ≤ 50	> 55 and ≤ 80
F	> 50	> 80

Following SDDOT guidance, LOS C is the desired minimum traffic operational goal for intersections in rural environments while LOS D is an acceptable operational goal for intersections in dense urban environments. The intersections within the study area have a desired traffic operational goal of LOS C.

Table 3 defines the follower density range corresponding to each LOS for two-lane highway segments. On two-lane highways, LOS E is considered to be at capacity. For two-lane highway segments, a LOS B would represent a scenario where some platooning is present with the potential passing demand and passing opportunities balanced while a LOS D would represent a scenario where significant platooning is present and passing demand far exceeds passing opportunities.

TABLE 3: LEVEL OF SERVICE FOR FOLLOWER DENSITY (TWO-LANE HIGHWAYS)

Level Of Service	Speed ≥ 50 mph	Speed < 50 mph
	Follower Density (followers/mi/ln)	Follower Density (followers/mi/ln)
A	≤ 2.0	≤ 2.5
B	> 2.0 – 4.0	> 2.5 – 5.0
C	> 4.0 – 8.0	> 5.0 – 10.0
D	> 8.0 – 12.0	> 10.0 – 15.0
E	> 12.0	> 15.0
F	Demand exceeds capacity	

Following SDDOT guidance, LOS C is the desired traffic operational goal for highways in rural environments (functional classification of collector) and LOS D is considered the minimal acceptable operations for highways in

urban environments (functional classification of minor arterial). The SD 38 highway segments within the study area are categorized as rural with federal functional classification of collector between Humboldt to Hartford and categorized as urban with federal functional classification of minor arterial between Hartford to Sioux Falls. The two-lane highway segments within the study area have a desired traffic operational goal of LOS C.

Traffic operations analysis for the study area intersections included capacity evaluation using the Highway Capacity Manual (HCM) 7th Edition techniques thru use of the Highway Capacity Software (HCS) 2022. Traffic operations analysis used existing intersection geometry with 2022 traffic volumes and posted travel speeds. Output reports from the HCS2022 software are available in **Appendix B**.

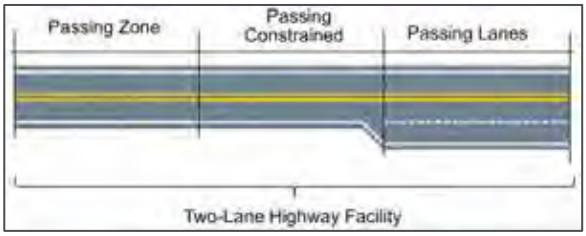
The results of the intersection capacity analysis can be seen in **Figure 5** and **Table 4** below.

TABLE 4: HCM TRAFFIC INTERSECTION OPERATIONS – EXISTING 2022

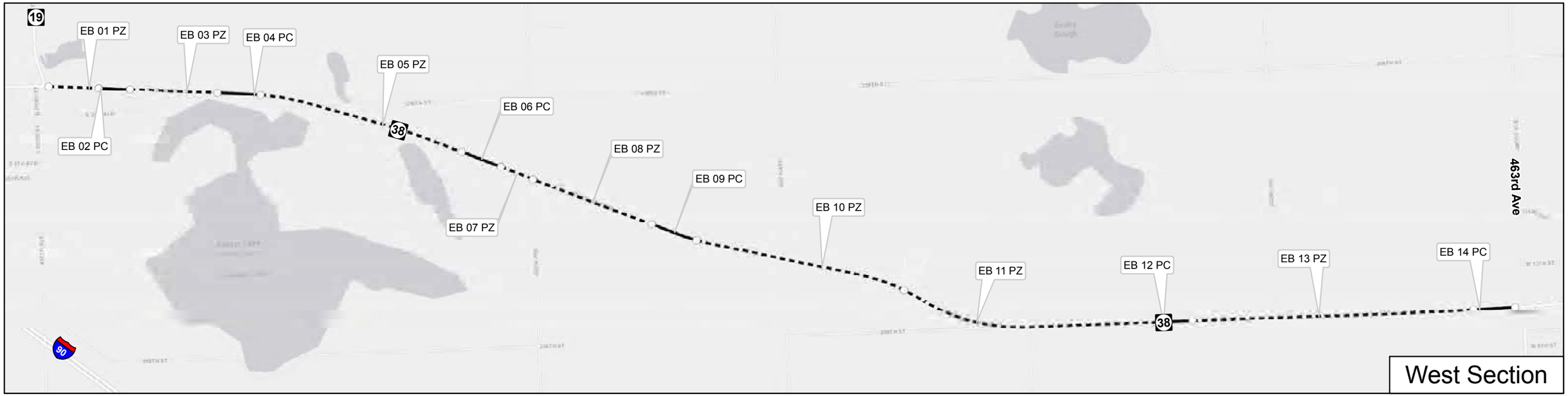
ID #	SD Hwy 38 Cross Street(s)	AM PEAK HOUR		PM PEAK HOUR	
		Delay	LOS	Delay	LOS
1	SD Highway 19 / 457th Avenue	9.9	A	10.2	B
2	459th Avenue	10.0	A	11.0	B
3	I-90 Speedway Entrance	0.0	A	0.0	A
4	Western Avenue / 463rd Avenue	11.9	B	14.0	B
5	Main Avenue	11.2	B	12.9	B
6	Vandemark Avenue	11.2	B	11.1	B
7	2nd Street	14.0	B	14.2	B
8	West Central High School Entrance	10.9	B	10.7	B
9	Railroad Street / 464th Avenue	14.2	B	14.1	B
10	Mickelson Road/260th Street	11.5	B	11.3	B
11	466th Avenue (North)	14.9	B	14.5	B
12	WB I-90 Exit 390	10.2	B	12.3	B
13	EB I-90 Exit 390	14.1	B	14.8	B
14	466th Avenue (South)	11.0	B	11.1	B
15	County Highway 141 / 468th Avenue	12.6	B	12.6	B
16	County Highway 139 / 469th Avenue	12.5	B	14.5	B
17	La Mesa Drive / 470th Avenue	14.8	B	16.4	C
18	Marion Road	16.0	B	18.7	B

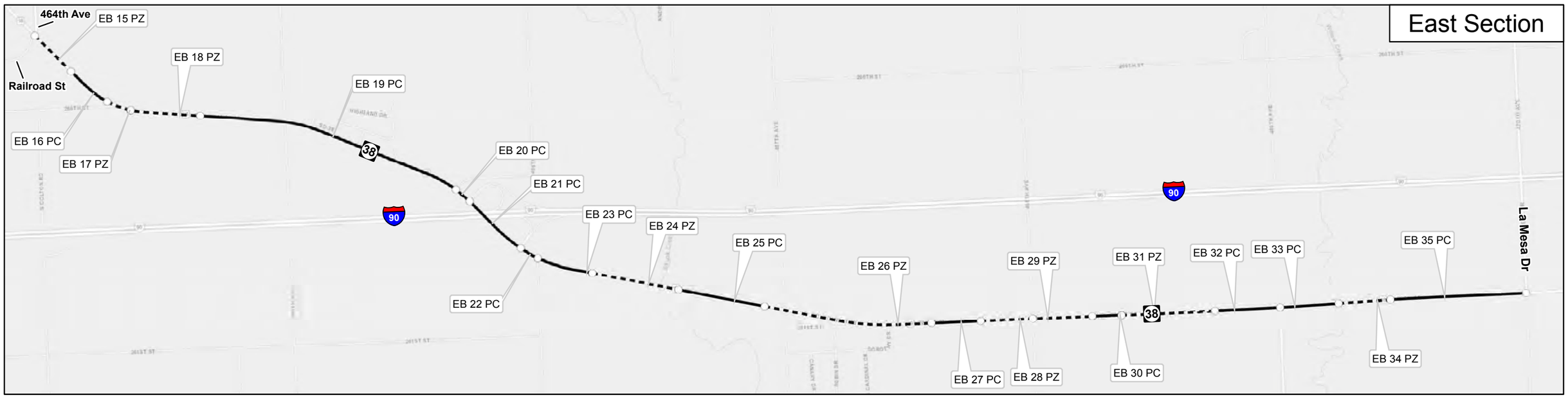
Under the existing conditions, the traffic operations analysis showed acceptable operations at all intersections within the study area, with intersections achieving LOS B or greater during both the AM and PM peak hours. The exception was the SD 38 & La Mesa Drive/470th Avenue intersection which produced a LOS C during the PM peak hour.

Traffic operations analysis for the study area SD Highway 38 corridor included capacity evaluation using the Highway Capacity Manual (HCM) 7th Edition techniques through use of the Highway Capacity Software (HCS) 2022. The highway was segmented according to the two-lane highway methodology presented in chapter 15 of HCM7, with segment breaks reflecting the passing zones. The two-lane highway traffic operations analysis used existing highway geometry with 2022 traffic volumes and posted travel speeds. Output reports from the HCS2022 software are available in **Appendix B**.



The segmentation for analysis can be seen in **Figure 6**. The results of the two-lane highway capacity analysis can be seen in **Table 5** and **Table 6**.





Highway 38 Analysis Segments

Eastbound Lanes

Legend

Analysis Segments

- Passing Constrained
- Passing Zones

N

0 0.5 1 Miles

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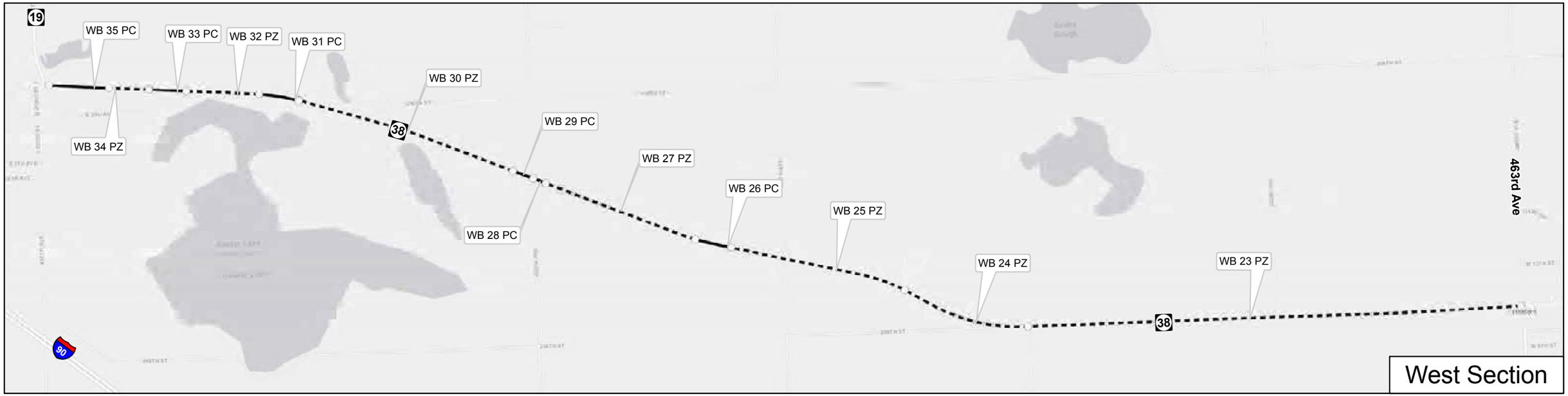

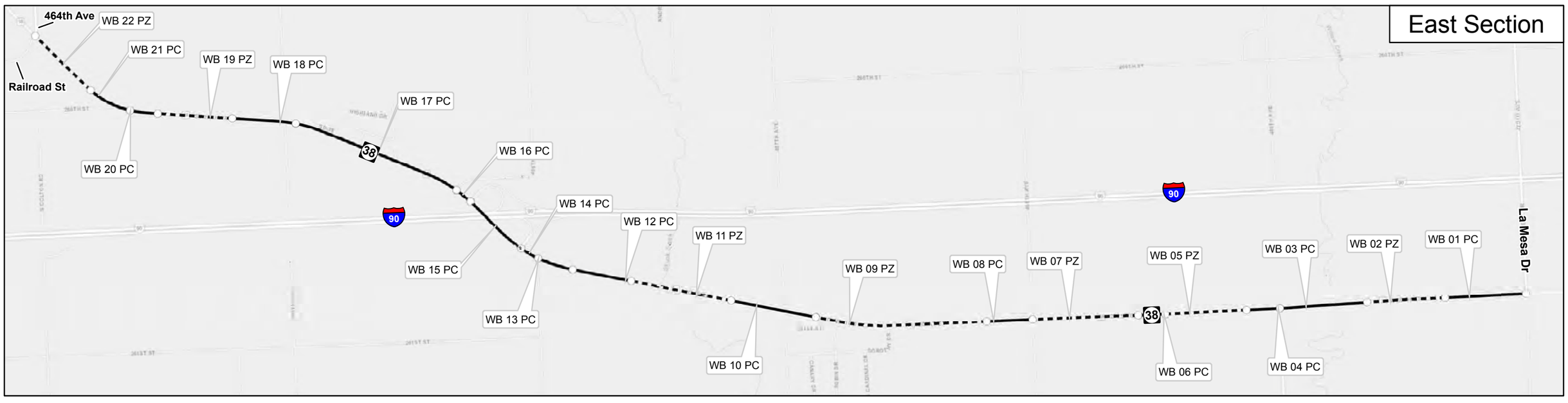

Highway 38 Analysis Segments

Westbound Lanes

Legend

Analysis Segments

- Passing Constrained
- Passing Zones

N

0 0.5 1 Miles

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TABLE 5: HCM TRAFFIC HIGHWAY OPERATIONS – EXISTING 2022, EASTBOUND SD 38

ID #	Segment Type	AM PEAK HOUR		PM PEAK HOUR	
		Density	LOS	Density	LOS
SD Highway 38 Eastbound					
EB 1	Passing Zone	0.5	A	0.2	A
EB 2	Passing Constrained	0.5	A	0.2	A
EB 3	Passing Zone	0.4	A	0.2	A
EB 4	Passing Constrained	0.5	A	0.2	A
EB 5	Passing Zone	0.4	A	0.2	A
EB 6	Passing Constrained	0.5	A	0.2	A
EB 7	Passing Zone	0.4	A	0.2	A
EB 8	Passing Zone	0.4	A	0.2	A
EB 9	Passing Constrained	0.5	A	0.2	A
EB 10	Passing Zone	0.4	A	0.2	A
EB 11	Passing Zone	0.4	A	0.3	A
EB 12	Passing Constrained	0.6	A	0.3	A
EB 13	Passing Zone	0.5	A	0.3	A
EB 14	Passing Constrained	1.0	A	0.6	A
EB 15	Passing Zone	3.1	B	1.5	A
EB 16	Passing Constrained	3.4	B	1.7	A
EB 17	Passing Zone	3.1	B	1.5	A
EB 18	Passing Zone	2.7	B	1.0	A
EB 19	Passing Constrained	2.8	B	1.0	A
EB 20	Passing Constrained	3.0	B	1.2	A
EB 21	Passing Constrained	3.0	B	1.3	A
EB 22	Passing Constrained	0.8	A	0.8	A
EB 23	Passing Constrained	1.0	A	0.8	A
EB 24	Passing Zone	0.9	A	0.7	A
EB 25	Passing Constrained	1.0	A	0.8	A
EB 26	Passing Zone	0.8	A	0.7	A
EB 27	Passing Constrained	1.0	A	0.8	A
EB 28	Passing Zone	0.9	A	0.7	A
EB 29	Passing Zone	1.1	A	1.0	A
EB 30	Passing Constrained	1.2	A	1.1	A
EB 31	Passing Zone	1.1	A	0.9	A
EB 32	Passing Constrained	1.2	A	1.1	A
EB 33	Passing Constrained	3.3	B	1.1	A
EB 34	Passing Zone	3.1	B	1.0	A
EB 35	Passing Constrained	3.2	B	1.0	A

TABLE 6: HCM TRAFFIC HIGHWAY OPERATIONS – EXISTING 2022, WESTBOUND SD 38

ID #	Segment Type	AM PEAK HOUR		PM PEAK HOUR	
		Density	LOS	Density	LOS
SD Highway 38 Westbound					
WB 1	Passing Constrained	0.6	A	3.5	B
WB 2	Passing Zone	0.6	A	3.3	B
WB 3	Passing Constrained	0.6	A	3.5	B
WB 4	Passing Zone	0.6	A	1.6	A
WB 5	Passing Constrained	0.6	A	1.5	A
WB 6	Passing Zone	0.6	A	1.6	A
WB 7	Passing Constrained	0.5	A	1.2	A
WB 8	Passing Constrained	0.6	A	1.3	A
WB 9	Passing Zone	0.5	A	1.1	A
WB 10	Passing Constrained	0.6	A	1.3	A
WB 11	Passing Zone	0.5	A	1.2	A
WB 12	Passing Constrained	0.6	A	1.3	A
WB 13	Passing Constrained	0.6	A	1.3	A
WB 14	Passing Constrained	0.6	A	1.5	A
WB 15	Passing Constrained	0.5	A	1.3	A
WB 16	Passing Constrained	1.1	A	4.0	B
WB 17	Passing Constrained	1.0	A	3.8	B
WB 18	Passing Constrained	1.1	A	4.0	B
WB 19	Passing Zone	1.0	A	3.7	B
WB 20	Passing Constrained	1.5	A	5.6	C
WB 21	Passing Constrained	1.5	A	4.3	C
WB 22	Passing Zone	1.4	A	3.9	B
WB 23	Passing Zone	0.2	A	0.7	A
WB 24	Passing Zone	0.2	A	0.6	A
WB 25	Passing Zone	0.2	A	0.5	A
WB 26	Passing Constrained	0.2	A	0.6	A
WB 27	Passing Zone	0.2	A	0.5	A
WB 28	Passing Constrained	0.2	A	0.6	A
WB 29	Passing Constrained	0.3	A	0.6	A
WB 30	Passing Zone	0.2	A	0.5	A
WB 31	Passing Constrained	0.3	A	0.6	A
WB 32	Passing Zone	0.2	A	0.5	A
WB 33	Passing Constrained	0.3	A	0.6	A
WB 34	Passing Zone	0.2	A	0.5	A
WB 35	Passing Constrained	0.3	A	0.6	A

Under the existing conditions, the traffic operations analysis showed acceptable operations at all of the highway segments within the study area, with the majority of segments achieving LOS B or greater during both the AM and PM peak hours. The exception was an approximately 1,500-foot segment of westbound SD 38 (WB 20 and 21), located near the intersection of Mickelson Road/260th Street and downstream of the 50-mph speed transition which resulted in a LOS C during the PM peak hour.

In general, the existing condition traffic operations demonstrated acceptable performance measures throughout all intersections and highway segments within the study area. The desired LOS was realized for all intersections and highway segments during the AM and PM peak hours.

Safety Review

The SDDOT provided historical crash data for the study area. HR Green reviewed crash data for all study intersections within the study limits to determine current crash trends and/or concerns. Crash data was also reviewed for highway segments to determine current crash trends and/or concerns, the SD 38 study corridor was divided into three segments for this review, SD 38 West of Hartford, SD 38 through Hartford and SD 38 East of Hartford. Intersection related crashes are considered as occurring within the study intersection area of influence and segment crashes are those that occurred outside of those intersection limits but within the SD 38 corridor study area. Crashes were analyzed for the five-year period between 2018-2022.

The intersection crash rate per Million Entering Vehicle (MEV) was calculated for the study intersections based on the 2022 traffic volume data provided in the "Existing Traffic Data" section of this report. The SDDOT provided the predicted crash frequency for study intersections and weighted crash rate for study segments. Some intersections were not provided a predicted crash rate due to lack of available minor road ADT. The crash data from SDDOT for the study area can be seen in **Appendix C**.

The following is a summary of the crash history for each study intersection and segment.

Study Intersections

SD Highway 38 & SD Highway 19 / 457th Avenue

- 3 Total Crashes
  - 3 = Property Damage Only
    - → 1 = Improper Turn
    - → 1 = Ice on the Road
    - → 1 = Animal in the Roadway
- Manner of Collision
    - 2 = Non-collision
    - 1 = Angle
- Crash Rate = 0.51 crashes per million entering vehicles
- Average Crash Frequency = 0.60 crashes per year
- Predicted Crashes = 0.54 crashes per year

Crash Experience Legend
- Crash Severity
- → Major Cause

Year of Crash

2022	2
2021	1
2020	0
2019	0
2018	0

The crash data showed 3 reported intersection-related crashes at the SD Highway 38 & SD Highway 19 intersection, which were classified as a Property Damage Only incidents. There was no primary cause of crash incidents with each cause of crash incident unique. The causes of the crashes were listed as an Improper Turn, Ice on the Road, and an Animal in the Roadway.

SD Highway 38 & 459th Avenue

Year of Crash	
2022	0
2021	0
2020	0
2019	2
2018	0

- 2 Total Crashes
  - 2 = Property Damage Only
    - → 1 = Failed to Yield to Vehicle
    - → 1 = Animal in Roadway
- Manner of Collision
    - 1 = Non-collision
    - 1 = Angle
- Crash Rate = 0.33 crashes per million entering vehicles
- Average Crash Frequency = 0.40 crashes per year
- Predicted Crashes = 0.68 crashes per year

The crash data showed 2 reported intersection-related crashes at the SD Highway 38 & 459th Ave intersection, which were classified as Property Damage Only incidents. There was no primary cause of crash incidents with each cause of crash incident unique. The causes of the crashes were listed as Failed to Yield to Vehicle and an Animal in Roadway.

SD Highway 38 & I-90 Speedway

There were no reported crashes within the influence area of this intersection from January 2018 through December 2022. However, a fatal crash had occurred on SD 38 near this intersection and has been listed under the summary for study corridor segments.

SD Highway 38 & Western Avenue / 463rd Avenue

Year of Crash	
2022	2
2021	1
2020	1
2019	0
2018	3

- 7 Total Crashes
  - 1 = Suspected Minor Injury
    - → 1 = Failure to Yield to Vehicle
  - 1 = Possible Injury
    - → 1 = Failure to Yield to Vehicle
  - 5 = Property Damage Only
    - → 2 = Failure to Yield to Vehicle
    - → 1 = Followed too Closely
    - → 1 = Improper Backing
    - → 1 = Road Surface Conditions (Snow/Ice)
- Manner of Collision
    - 2 = Rear-end
    - 4 = Angle
    - 1 = Sideswipe same direction
- Crash Rate = 0.81 crashes per million entering vehicles
- Average Crash Frequency = 1.40 crashes per year
- Predicted Crashes = 1.80 crashes per years

The crash data showed 7 reported intersection-related crashes at the SD Highway 38 & Western Ave / 463rd Ave intersection, with 1 classified as Suspected Minor Injury, 1 classified as Possible Injury, and 5 classified as Property Damage Only. The primary causes of the crash incidents was Failure to Yield to Vehicle (57%), Followed too Closely (14%), Improper Backing (14%), and Road Surface Conditions (14%).

SD Highway 38 & Main Avenue

- 1 Total Crash
  - 1 = Property Damage Only
    - → 1 = Failed to Yield to Vehicle
- Manner of Collision
  - 1 = Angle
- Crash Rate = 0.12 crashes per million entering vehicles
- Average Crash Frequency = 0.20 crashes per year
- Predicted Crashes = Not Available

Year of Crash	
2022	0
2021	1
2020	**0**
2019	0
2018	0

The crash data showed 1 reported intersection-related crashes at the SD Highway 38 & Main Avenue intersection, which was classified as a Property Damage Only incident. The cause of the crash incident was listed as Failure to Yield to Vehicle.

SD Highway 38 & Vandemark Avenue

There were no reported crashes at this intersection from January 2018 through December 2022.

SD Highway 38 & 2nd Street

- 2 Total Crashes
  - 2 = Property Damage Only
    - → 1 = Failed to Yield to Vehicle
    - → 1 = Followed too Closely
- Manner of Collision
  - 1 = Rear-end
  - 1 = Angle
- Crash Rate = 0.23 crashes per million entering vehicles
- Average Crash Frequency = 0.40 crashes per year
- Predicted Crashes = Not Available

Year of Crash	
2022	0
2021	1
2020	1
2019	0
2018	0

The crash data showed 2 reported intersection-related crashes at the SD Highway 38 & 2nd St intersection, which were classified as a Property Damage Only incidents. There was no primary cause of crash incidents with each cause of crash incident unique. The causes of the crashes were listed as Failed to Yield to Vehicle and Followed too Closely.

SD Highway 38 & West Central High School Entrance

- 2 Total Crashes
  - 1 = Suspected Serious Injury
    - → 1 = Drinking
  - 1 = Property Damage Only
    - → 1 = Failed to Yield to Vehicle
- Manner of Collision
  - 2 = Angle
- Crash Rate = 0.23 crashes per million entering vehicles
- Average Crash Frequency = 0.40 crashes per year
- Predicted Crashes = Not Available

Year of Crash	
2022	0
2021	1
2020	0
2019	1
2018	0

The crash data showed 2 reported intersection-related crashes at the SD Highway 38 & West Central High School Entrance intersection, which were classified as a Property Damage Only incident and a Suspected Serious Injury

incident. There was no primary cause of crash incidents with each cause of crash incident unique. The causes of the crashes were listed as Failed to Yield to Vehicle, and Drinking.

SD Highway 38 & Railroad Street / 464th Avenue

- 2 Total Crashes
  - 1 = Suspected Serious Injury
    - → 1 = Ran off Road
  - Property Damage Only
    - → 1 = Distracted
- Manner of Collision
  - 1 = Non-collision
- Crash Rate = 0.22 crashes per million entering vehicles
- Average Crash Frequency = 0.40 crashes per year
- Predicted Crashes = 1.79 crashes per years

Year of Crash	
2022	0
2021	1
2020	0
2019	1
2018	0

The crash data showed 2 reported intersection-related crashes at the SD Highway 38 & Railroad Street / 464th Ave intersection, which were classified as a Property Damage Only incident and a Suspected Serious Injury incident. There was no primary cause of crash incidents with each cause of crash incident unique. The causes of the crashes were listed as Distracted Driving, and Ran off Road.

SD Highway 38 & Mickelson Road / 260th Street

There were no reported crashes at this intersection from January 2018 through December 2022.

SD Highway 38 & 466th Avenue (North Intersection)

- 2 Total Crashes
  - 1 = Suspected Minor Injury
    - → 1 = Drinking
  - 1 = Property Damage Only
    - → 1 = Followed Too Closely
- Manner of Collision
  - 1 = Non-collision
  - 1 = Rear-end
- Crash Rate = 0.23 crashes per million entering vehicles
- Average Crash Frequency = 0.40 crashes per year
- Predicted Crashes = Not Available

Year of Crash	
2022	0
2021	0
2020	1
2019	0
2018	1

The crash data showed 2 reported intersection-related crashes at the SD Highway 38 & 466th Avenue (North) intersection, which was classified as a Property Damage Only incident and Suspected Serious Injury incident. There was no primary cause of crash incidents with each cause of crash incident unique. The causes of the crashes were listed as Followed Too Closely, and Drinking.

SD Highway 38 & WB I-90 Exit 390

- 4 Total Crashes
  - 2 = Possible Injury
    - → 1 = Drinking
    - → 1 = Failure to Yield to Vehicle
  - 2 = Property Damage Only
    - → 1 = Distracted
    - → 1 = Followed Too Closely
- Manner of Collision
  - 1 = Non-collision
  - 3 = Rear-end
- Crash Rate = 0.46 crashes per million entering vehicles
- Average Crash Frequency = 0.80 crashes per year
- Predicted Crashes = Not Available

Year of Crash	
2022	1
2021	0
2020	0
2019	2
2018	1

The crash data showed 4 reported intersection-related crashes at the SD Highway 38 & WB I-90 Exit 390 intersection, which were classified as a Property Damage Only and Possible Injury. There was no primary cause of crash incidents with each cause of crash incident unique. The causes of the crashes were listed as Distracted driving, Followed Too Closely, Drinking, and Failure to Yield to Vehicle.

SD Highway 38 & EB I-90 Exit 390

There were no reported crashes at this intersection from January 2018 through December 2022.

SD Highway 38 & 466th Avenue (South Intersection)

- 1 Total Crashes
  - 1 = Property Damage Only
    - → 1 = Failure to Yield to Vehicle
- Manner of Collision
  - 1 = Angle
- Crash Rate = 0.12 crashes per million entering vehicles
- Average Crash Frequency = 0.20 crashes per year
- Predicted Crashes = Not Available

Year of Crash	
2022	0
2021	0
2020	0
2019	1
2018	0

The crash data showed 1 reported intersection-related crashes at the SD Highway 38 & 466th Avenue (South) intersection, which was classified as a Property Damage Only incident. The cause of the crash incident was listed as Failure to Yield to Vehicle.

SD Highway 38 & County Highway 141 / 468th Avenue

- 2 Total Crashes
  - 1 = Suspected Serious Injury
    - → 1 = Disregard Traffic Signs
  - 1 = Suspected Minor Injury
    - → 1 = Ice on Roadway
- Manner of Collision
  - 1 = Non-collision
  - 1 = Angle
- Crash Rate = 0.23 crashes per million entering vehicles
- Average Crash Frequency = 0.40 crashes per year
- Predicted Crashes = 1.39 crashes per years

Year of Crash	
2022	1
2021	1
2020	0
2019	0
2018	0

The crash data showed 2 reported intersection-related crashes at the SD Highway 38 & 468th Avenue intersection, which were classified as Suspected Serious Injury and Suspected Minor Injury. There was no primary cause of crash incidents with each cause of crash incident unique. The causes of the crashes were listed as Ice on the Roadway, and Disregarding Traffic Signs.

SD Highway 38 & County Highway 139 / 469th Avenue

- 3 Total Crashes
  - 1 = Suspected Minor Injury
    - → 1 = Driving too Fast for Conditions
  - 2 = Property Damage Only
    - → 1 = Animal in the Roadway
    - → 1 = Improper Turn
- Manner of Collision
  - 1 = Non-collision
  - 2 = Angle
- Crash Rate = 0.35 crashes per million entering vehicles
- Average Crash Frequency = 0.60 crashes per year
- Predicted Crashes = 2.02 crashes per years

Year of Crash	
2022	0
2021	0
2020	1
2019	1
2018	1

The crash data showed 3 reported intersection-related crashes at the SD Highway 38 & 469th Ave intersection, with 2 classified as Property Damage Only incidents, and 1 classified as Suspected Minor Injury. There was no primary cause of crash incidents with each cause of crash incident unique. The causes of the crashes were listed as Driving too Fast for Conditions, Animal in the Roadway, and Improper Turn.

SD Highway 38 & La Mesa Drive / 470th Avenue

- 3 Total Crashes
  - 1 = Fatal
    - → 1 = Disregarded Traffic Signs
  - 2 = Property Damage Only
    - → 1 = Improper Backing
    - → 1 = Improper Turn
- Manner of Collision
  - 1 = Rear-end
  - 2 = Angle
- Crash Rate = 0.19 crashes per million entering vehicles

Year of Crash	
2022	0
2021	0
2020	2
2019	0
2018	1

- Average Crash Frequency = 0.60 crashes per year
- Predicted Crashes = 2.62 crashes per years

The crash data showed 3 reported intersection-related crashes at the SD Highway 38 & La Mesa intersection, with 2 classified as Property Damage Only incidents, and 1 Fatal incident. There was no primary cause of crash incidents with each cause of crash incident unique. The causes of the crashes were listed as Disregarded Traffic Signs, Improper Backing, and Improper Turn.

The fatal crash incident occurred on December 26, 2020, at approximately 7:30 AM, when a southbound vehicle failed to stop at the stop sign and was struck by an eastbound vehicle. The pavement conditions were reported as dry and adverse weather was not listed as a contributing factor. This crash resulted in a single occupant fatality and single occupant injury.

SD Highway 38 & Marion Road

- 14 Total Crashes
  - 3 = Suspected Minor Injury
    - → 1 = Drinking
    - → 1 = Failure to Yield to Vehicle
    - → 1 = Disregarded Traffic Signs or Signal
  - 4 = Possible Injury
    - → 2 = Disregarded Traffic Signs or Signal
    - → 1 = Followed too Closely
    - → 1 = Illness
  - 7 = Property Damage Only
    - → 2 = Failure to Yield to Vehicle
    - → 2 = Disregard Traffic Signs or Signals
    - → 1 = Improper Lane Change
    - → 1 = Driving too Fast for Conditions
    - → 1 = Distracted
- Manner of Collision
  - 1 = Non-collision
  - 5 = Rear-end
  - 7 = Angle
  - 1 = Sideswipe, same direction
- Crash Rate = 0.79 crashes per million entering vehicles
- Average Crash Frequency = 2.80 crashes per year
- Predicted Crashes = 1.56 crashes per years

Year of Crash	
2022	3
2021	3
2020	2
2019	1
2018	5

The crash data showed 14 reported intersection-related crashes at the SD Highway 38 & Marion Road intersection, with 7 classified as Property Damage Only incidents, 4 Possible Injury incidents, and 3 Suspected Injury incidents. The primary causes of the crashes were determined to be Disregarded Traffic Signs or Signal (27%) and Failure to Yield to Vehicle (20%).

Study Corridor Segments

SD Highway 38 Corridor Segments West of Hartford

- 50 Total Crashes
  - 2 = Fatal
    - → 1= Failure to Yield to Vehicle
    - → 1 = Snowmobile in the roadway
  - 1 = Suspected Serious Injury

Year of Crash	
2022	9
2021	10
2020	18
2019	6
2018	7

        - 1 = Running off the Road
    - 1 = Suspected Minor Injury
        - 1 = Distracted
    - 3 = Possible Injury
        - 1 = Wrong side or Wrong Way
        - 1 = Followed Too Closely
        - 1 = Driving too Fast for Conditions
    - 43 = Property Damage Only
        - 30 = Animal in the Roadway
        - 1 = Failure to Yield to Vehicle
        - 2 = Improper Passing
        - 2 = Followed too Closely
        - 1 = Failure to Keep Proper Lane
        - 1 = Swerving or Avoiding
        - 1 = Distracted
        - 1 = Object in Roadway
        - 2 = Weather Conditions
        - 1 = Running off the Road
        - 1 = Unsecured Ratchet Strap
- Manner of Collision
    - 36 = Non-collision
    - 7 = Rear-end
    - 3 = Angle
    - 2 = Sideswipe, Same direction
    - 2 = Sideswipe, opposite direction
- Statewide Average Crash Rate = 1.73 crashes per 100 million vehicle miles traveled
- Weighted Crash Rate = 1.86 crashes per 100 million vehicle miles traveled

The crash data showed 50 reported corridor-related crashes along SD Highway 38 with 43 classified as Property Damage Only incidents, 3 Possible Injury incidents, 1 Suspected Injury incident, 1 Suspected Serious Injury incident, and 2 Fatal incidents. The primary cause of the corridor crashes was determined to be Animal in the Roadway which contributed to 60% of crashes. Following Too Closely and Failure to Yield to a Vehicle were listed as the two most frequent driver contributed circumstances.

A fatal crash incident occurred near mile marker 353, on August 29, 2020, at approximately 6:45 PM, when an eastbound vehicle stopped in the travel lane to complete a left turn and was rear-ended by an eastbound motorcyclist. The pavement conditions were reported as dry and adverse weather was not listed as a contributing factor. This crash resulted in a single occupant fatality.

A fatal crash incident occurred near mile marker 355, on December 17, 2022, at approximately 6:35 PM, when a westbound vehicle struck a snowmobile and occupant who was in the roadway. The pavement conditions were reported as snow covered which may have been a contributing factor. This crash resulted in a single occupant fatality.

SD Highway 38 Corridor Segments in Hartford

- 16 Total Crashes
  - 3 = Possible Injury
    - → 1 = Followed too Closely
    - → 1 = Fatigue/Asleep
    - → 1 = Run off Road
  - 13 = Property Damage Only
    - → 6 = Animal in Roadway
    - → 2 = Followed too Closely
    - → 2 = Driving too Fast for Conditions
    - → 1 = Failure to Yield to Vehicle
    - → 1 = Running off Road
    - → 1 = Vehicle Fire
- Manner of Collision
  - 10 = Non-collision
  - 5 = Rear-end
  - 1 = Sideswipe, opposite direction
- Statewide Average Crash Rate = 1.73 crashes per 100 million vehicle miles traveled
- Weighted Crash Rate = 0.33 to 1.88 crashes per 100 million vehicle miles traveled

Year of Crash	
2022	4
2021	4
2020	1
2019	1
2018	6

The crash data showed 16 reported corridor-related crashes along SD Highway 38, with 13 classified as Property Damage Only incidents, and 3 Possible Injury incidents. The primary cause of crashes was determined to be Animal in the Roadway which contributed to 35% of crashes. Following Too Closely and Driving Too Fast for Conditions were listed as the two most frequent driver contributed circumstances.

SD Highway 38 Corridor Segments East of Hartford

- 57 Total Crashes
  - 1 = Fatal Injury
    - → 1 = Wrong Side or Wrong Way
  - 4 = Suspected Serious Injury
    - → 1 = Running off Road
    - → 1 = Failure to Keep Proper Lane
    - → 1 = Failure to Yield to Vehicle
    - → 1 =Illness
  - 4 = Suspected Minor Injury
    - → 1 = Improper Passing
    - → 2 = Drinking
    - → 1 = Followed Too Closely
  - 4 = Possible Injury
    - → 1 = Followed too Closely
    - → 1 = Swerving or Avoiding
    - → 1 = Run off Road
    - → 1 = Failure to Keep Proper Lane
  - 44 = Property Damage Only
    - → 27 = Animal in Roadway
    - → 1 = Driving too Fast for Conditions

Year of Crash	
2022	9
2021	**15**
2020	11
2019	14
2018	8

- 1 = Improper Passing
- 5 = Followed too Closely
- 1 = Failure to Keep Proper Lane
- 1 = Running off Road
- 1 = Over-Correcting/Over-Steering
- 1 = Fatigued/Asleep
- 2 = Drinking
- 1 = Distracted
- 2 = Objects in Roadway
- 1 = Equipment Malfunction

- Manner of Collision
  - 40 = Non-collision
  - 9 = Rear-end
  - 1 = Head-on
  - 2 = Angle
  - 3 = Sideswipe, same direction
  - 2 = Sideswipe, opposite direction
- Statewide Average Crash Rate = 1.73 crashes per 100 million vehicle miles traveled
- Weighted Crash Rate = 0.21 to 1.97 crashes per 100 million vehicle miles traveled

The crash data showed 57 reported corridor-related crashes along SD Highway 38 with 44 classified as Property Damage Only incidents, 4 Possible Injury incidents, 4 Suspected Injury incident, 4 Suspected Serious Injury incident, and 1 Fatal incident. The primary cause of crashes was determined to be Animal in the Roadway which contributed to 47% of crashes. Following Too Closely and Drinking were listed as the two most frequent driver contributed circumstances.

The fatal crash incident occurred on February 17, 2021, at approximately 7:50 AM, when an eastbound vehicle crossed into the opposing lane and was struck by a westbound vehicle. The pavement conditions were reported as snow covered which may have been a contributing factor. This crash resulted in a single occupant fatality.

Crash Summary

Overall, there was a total of 171 crashes that occurred within the SD 38 study area. Of these incidents, there were 4 Fatal incidents (2%), 37 Injury incidents (22%), and 130 Property Damage Only incidents (76%). The majority of crashes were classified as Non-Collision incidents (57%), followed by Rear-End (20%) and Angle incidents (15%). The SD 38 study segments contained 123 (72%) crash incidents and the study intersections contained 48 (28%) crash incidents. The crash summary by manner of collision can be seen in **Table 7** and **Table 8** for the intersection related crashes and segment crashes, respectively. The crash summary by injury severity can be seen in **Table 9** and **Table 10** for the intersection related crashes and segment crashes, respectively.

The intersection with the highest rate of crash frequency was the SD Highway 38 & Marion Road intersection with 14 (30%) of the total intersection crash instances. The segment of SD 38 east of Hartford had the highest frequency of corridor crashes with 57 (46%) of the total corridor segment crash instances.

The main driver contributing circumstances that resulted in fatal and injury crash severity incidents within the study area included Drinking (20%), Failure to yield to vehicle (17%), Disregard of traffic signs or signals (13%), or some form of roadway/lane departure (20%).

There were 2 fatal crash instances that had occurred west of Hartford and 2 fatal crash instances that had occurred east of Hartford during the study period. Each fatal crash had its own unique circumstances that contributed to the event. However, intersection control and roadway geometry modifications may reduce the potential for future crash occurrences.

The crash summary by manner of collision can be seen in **Table 7** and **Table 8** for the study intersection related crashes and segment crashes, respectively. It should be noted that several minor intersections not previously identified for study focus were included in the crash analysis of segments.

TABLE 7: SD 38 INTERSECTION MANNER OF CRASH

SD Highway 38 Intersection	Total Crashes	Non collision	Rear-end	Head-on	Angle	Sideswipe, same direction	Sideswipe, opposite direction
SD Highway 19 / 457th Avenue	**3**	2	0	0	1	0	0
459th Avenue	**2**	1	0	0	1	0	0
I-90 Speedway Entrance	**0**	0	0	0	0	0	0
Western Avenue / 463rd Avenue	**7**	0	2	0	4	1	0
Main Avenue	**1**	0	0	0	1	0	0
Vandemark Avenue	**0**	0	0	0	0	0	0
2nd Street	**2**	0	1	0	1	0	0
West Central High School Entrance	**2**	0	0	0	2	0	0
Railroad Street / 464th Avenue	**2**	1	0	0	0	1	0
Mickelson Road/260th Street	**0**	0	0	0	0	0	0
466th Avenue (North)	**2**	1	1	0	0	0	0
WB I-90 Exit 390	**4**	1	3	0	0	0	0
EB I-90 Exit 390	**0**	0	0	0	0	0	0
466th Avenue (South)	**1**	0	0	0	1	0	0
County Highway 141 / 468th Avenue	**2**	1	0	0	1	0	0
County Highway 139 / 469th Avenue	**3**	1	0	0	2	0	0
La Mesa Drive / 470th Avenue	**3**	0	1	0	2	0	0
Marion Road	**14**	1	5	0	7	1	0
TOTALS	**48**	**9**	**13**	**0**	**23**	**3**	**0**

TABLE 8: SD 38 SEGMENT MANNER OF CRASH

SD Highway 38 Segment	Total Crashes	Non collision	Rear-end	Head-on	Angle	Sideswipe, same direction	Sideswipe, opposite direction
Humboldt to Hartford	**50**	36	7	0	3	2	2
Within Hartford	**16**	10	5	0	0	0	1
Hartford to Sioux Falls	**57**	40	9	1	2	3	2
TOTALS	**123**	**86**	**21**	**1**	**5**	**5**	**5**

The majority of crashes at study intersections were categorized as Rear-End (27%) or Angle (48%) manner of collision. The majority of crashes along highway segment were categorized as Non-Collision (70%) and Rear-End (17%) manner of collisions.

TABLE 9: SD 38 INTERSECTION CRASH SEVERITY

SD Highway 38 Intersection	Total Crashes	Fatal Incidents	Serious Injury Incidents	Minor Injury Incidents	Possible/Unknown Incidents	PDO Incidents	Average Crash Frequency	Predicted Crash Frequency
SD Highway 19 / 457th Avenue	**3**	0	0	0	0	3	*0.60*	*0.54*
459th Avenue	**2**	0	0	0	0	2	*0.40*	*0.68*
I-90 Speedway Entrance	**0**	0	0	0	0	0	*0.00*	*NA*
Western Avenue / 463rd Avenue	**7**	0	0	1	1	5	*1.40*	*1.80*
Main Avenue	**1**	0	0	0	0	1	*0.20*	*NA*
Vandemark Avenue	**0**	0	0	0	0	0	*0.00*	*NA*
2nd Street	**2**	0	0	0	0	2	*0.40*	*NA*
West Central High School Entrance	**2**	0	1	0	0	1	*0.40*	*NA*
Railroad Street / 464th Avenue	**2**	0	1	0	0	1	*0.40*	*1.79*
Mickelson Road/260th Street	**0**	0	0	0	0	0	*0.00*	*NA*
466th Avenue (North)	**2**	0	0	1	0	1	*0.40*	*NA*
WB I-90 Exit 390	**4**	0	0	0	2	2	*0.80*	*NA*
EB I-90 Exit 390	**0**	0	0	0	0	0	*0.00*	*NA*
466th Avenue (South)	**1**	0	0	0	0	1	*0.20*	*NA*
County Highway 141 / 468th Avenue	**2**	0	1	1	0	0	*0.40*	*1.39*
County Highway 139 / 469th Avenue	**3**	0	0	1	0	2	*0.60*	*2.02*
La Mesa Drive / 470th Avenue	**3**	1	0	0	0	2	*0.60*	*2.62*
Marion Road	**14**	0	0	3	4	7	*2.80*	*1.56*

NOTE: RED INDICATES A FATALITY OR CRASH RATE ABOVE EXPECTATIONS

TABLE 10: SD 38 SEGMENT CRASH SEVERITY

SD Highway 38 Segment	Total Crashes	Fatal Incidents	Serious Injury Incidents	Minor Injury Incidents	Possible/Unknown Incidents	PDO Incidents	Weighted Crash Rate	Statewide Average Crash Rate
Humboldt to Hartford	**50**	2	1	1	3	43	*1.86*	*1.73*
Within Hartford	**16**	0	0	0	3	13	*0.33-1.88*	*1.73*
Hartford to Sioux Falls	**57**	1	4	4	4	44	*0.21-1.97*	*1.73*

NOTE: RED INDICATES A FATALITY OR CRASH RATE ABOVE EXPECTATIONS

The majority of intersections had lower observed crash frequency than the predicted crash frequency. However, the SD 38 & SD 19 and the SD 38 & Marion Road intersections had an average five-year crash frequency that was above the predicted crash frequency. According to data provided by SDDOT, the SD 38 highway segments as a whole had a weighted crash rate of 3.45 which exceeded the statewide average of 1.73 for rural minor arterials for the period ending in 2020. SDDOT weighted crash rates can be seen in **Appendix C**.

The SDDOT has officially adopted the safety targets presented in the South Dakota Highway Safety Plan and identified safety targets for number of fatalities, rate of fatal incidents, number of serious injuries, and rate of serious

injury incidents. The 2023 targets for safety performance measures established by SDDOT have been endorsed by the Sioux Falls Area MPO. The MPO has resolved to plan and program projects that contribute to the accomplishments of these safety performance goals. The safety performance goals are presented in **Table 11** along with the values calculated within the SD 38 study area.

TABLE 11: ESTABLISHED SAFETY PERFORMANCE GOALS

South Dakota DOT / Sioux Falls MPO Safety Performance Goals	Target Goal	SD38 Corridor Value
Number of Fatalities	**122.7**	*4.0*
Rate of Fatalities per HMVMT	**1.20**	*4.1*
Number of Serious Injuries	**635.9**	*6.0*
Rate of Serious Injuries per HMVMT	**6.22**	*8.1*
Number of Non-Motorized Fatalities and Serious Injuries	**40.0**	*0.0*

NOTE: RED INDICATES A VALUE ABOVE TARGET GOAL
TOTAL INJURY NUMBERS AND CRASH RATES ARE STATEWIDE GOALS.

The number of crash instances within the study area were evaluated and crash rates for fatal and serious injury incidents were calculated. Using the most recent 5-year crash history, the SD 38 study area had a fatal crash rate of 4.1 crashes per hundred million vehicle miles traveled (HMVMT) which exceeded the safety target fatal crash rate of 1.20 crashes per HMVMT and a serious injury crash rate of 8.1 crashes per HMVMT which exceeded the safety target serious injury crash rate of 1.20 crashes per HMVMT.

A depiction of the crash frequency along the SD Highway 38 corridor can be seen in **Figure 7** with higher frequency crash locations appearing in red. The fatal and major/minor injury incidents can be seen in **Figure 8**. The SD38 highway segment weight average crash rates can be seen in **Figure 9**.

Highway 38 Analysis Segments

Crash Frequency Map

N

0 1 2 3 Miles

HRGreen

Highway 38 Analysis Segments

Crash Severity Map

Legend

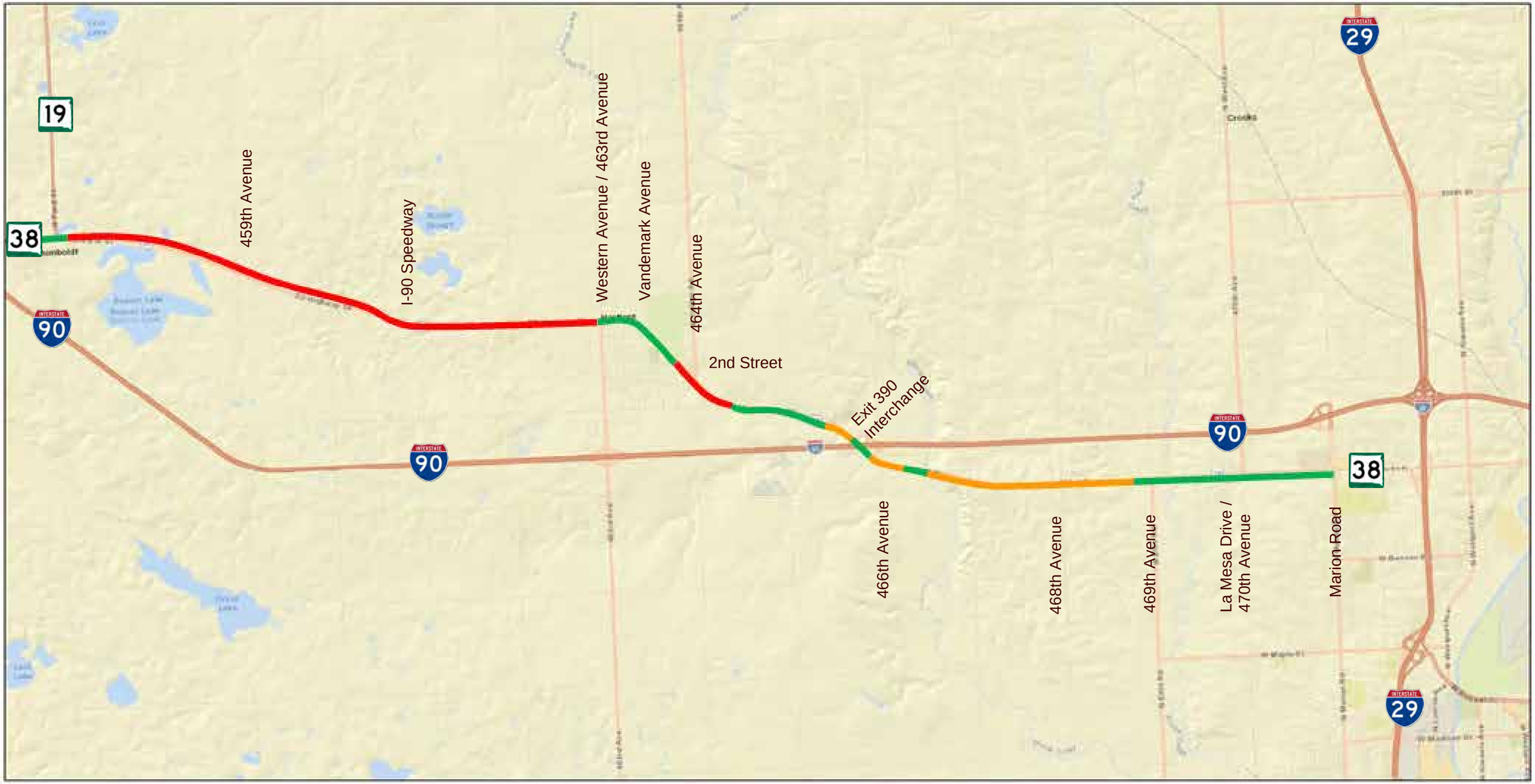
Crash Severity

- K - Fatal
- A - Suspected Serious Injury
- B - Suspected Minor Injury

N

0 1 2 3 Miles

HRGreen



Highway 38 Analysis Segments

Weighted Crash Rate Map

FIGURE 9

Legend

Segment Weighted Crash Rate

- 0.0 to < 1.0 = Low
- 1.0 to < 1.74 = Medium
- > 1.74 = High

N

0 1 2 3 Mile

HRGreen

Summary

The purpose of this technical memorandum is to document the existing conditions traffic assessment at the eighteen study intersections and associated highway corridor segments along the SD Highway 38 corridor, from the SD Highway 19 intersection in Humboldt, South Dakota to the Marion Road intersection in Sioux Falls, South Dakota.

The existing conditions traffic assessment included the review of traffic volume data at the eighteen study intersections along the study corridor and determination of peak hour traffic volumes. The traffic volume data collection revealed that the peak hours of traffic along the corridor were generally from 7:15-8:15 AM and 4:45-5:45 PM. Using the established traffic volumes, the traffic operations at intersection and along the two-lane highway were evaluated. It was determined that all intersections and highway segment represented acceptable LOS.

The crash history was reviewed at the study intersections and compared to the predicted crashes per year. It was determined that the SD 38 & SD 19 and the SD 38 & Marion Road intersections experienced an average crash frequency higher than the predicted number of crashes per year. The study intersections represented 1 fatal incident, 3 major injury incidents, and 7 minor injury incidents. The majority of intersection crashes were categorized as Rear-end or Angle manner of crash. The primary causes of these crashes was determined to be Followed Too Closely and Failure to Yield to Vehicle.

The crash history was reviewed at the study highway segments and it was determined that the SD Highway 38 corridor had a weighted crash rate of 3.45 which is higher than the statewide average crash rate of 1.73 for rural minor arterials. The study highway segments represented 3 fatal incidents, 5 major injury incidents, and 5 minor injury incidents. The highway segment east of Hartford had the highest frequency of crash instances with 57 recorded crashes (45.9%). The majority of crashes along highway segments were the result of vehicle-animal strikes with 63 instances recorded (51%). Other contributing causes of crash instances were Followed Too Closely, Failure to Keep in Proper Lane, and Running Off Road.

It was further determined that the current fatal crash rate and serious injury crash rate along the SD 38 study corridor was above the safety performance targets established by the SDDOT and endorsed by the Sioux Falls Area MPO.

The existing year traffic volumes established in this report will be the basis for future year traffic projections and traffic capacity analysis studies in subsequent phases of this project.

Appendix A – Traffic Data

Pedestrian Crosswalks at Study Intersections

SD 38 & Vandemark Avenue

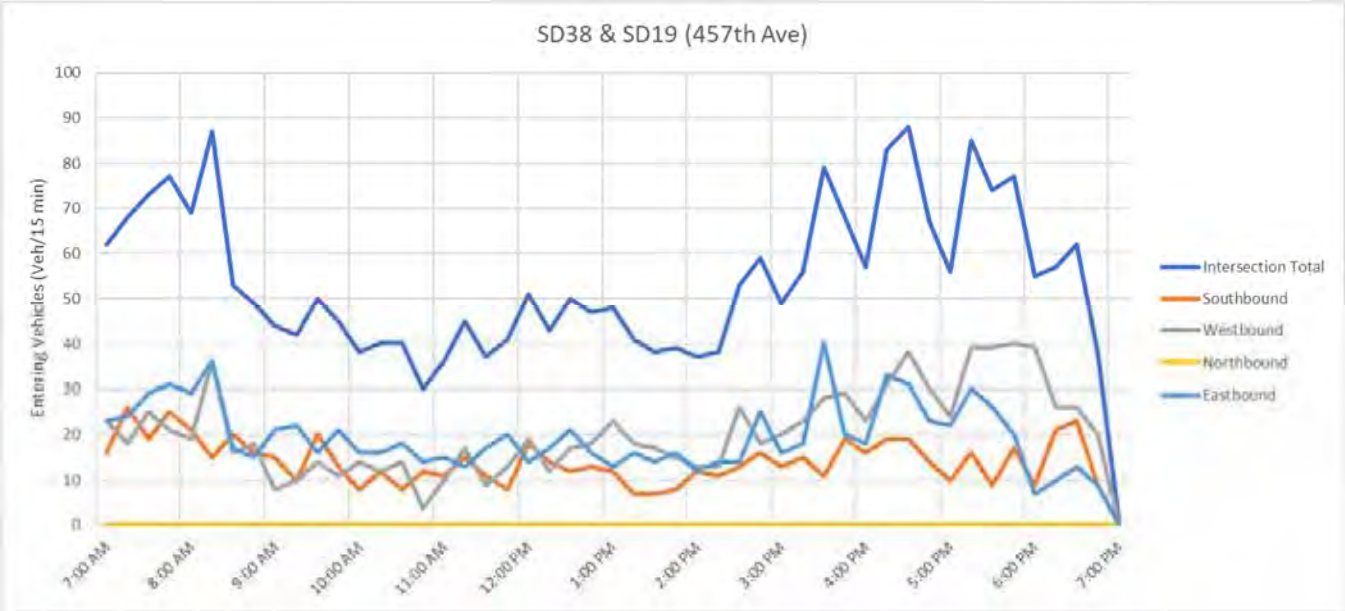
SD 38 & 2nd Street

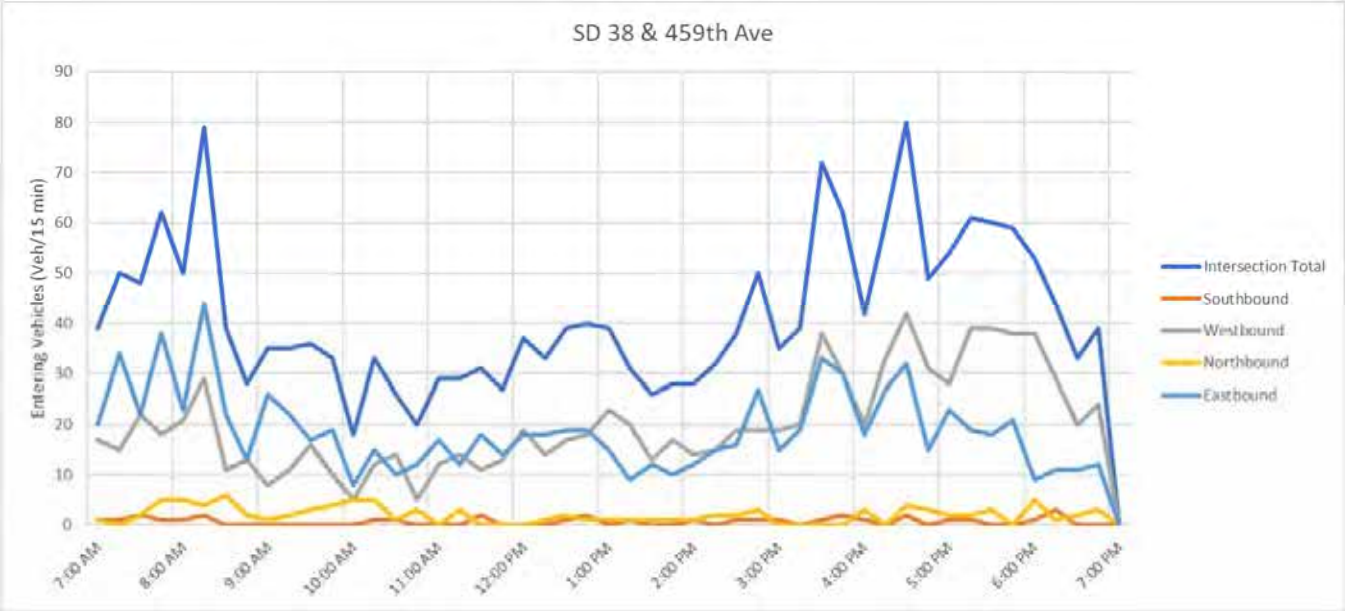
SD 38 & West Central High School Entrance

SD 38 & Railroad Street

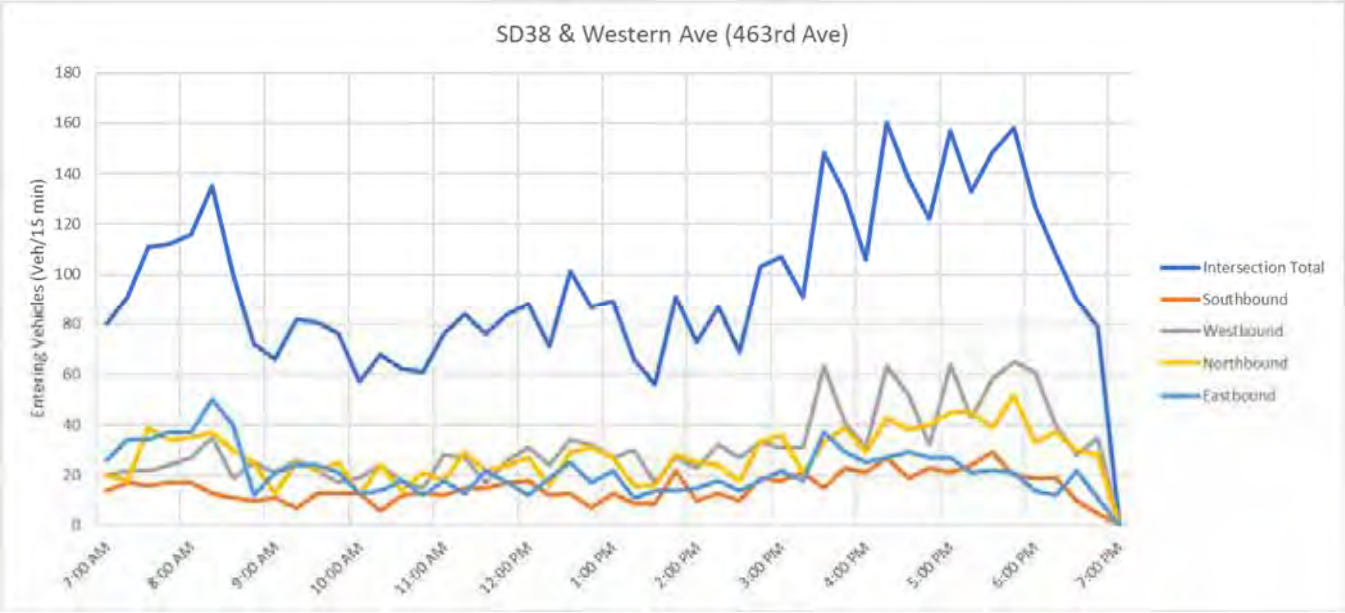
SD 38 & Marion Road

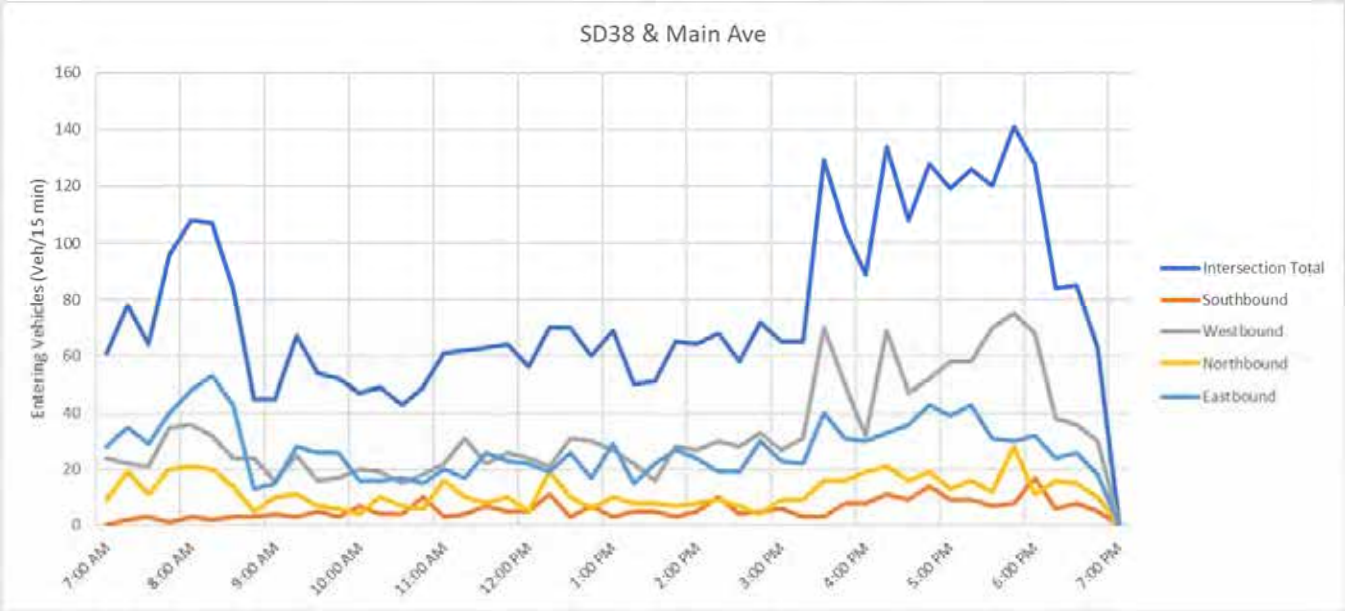
Hourly Distribution of Traffic Volumes

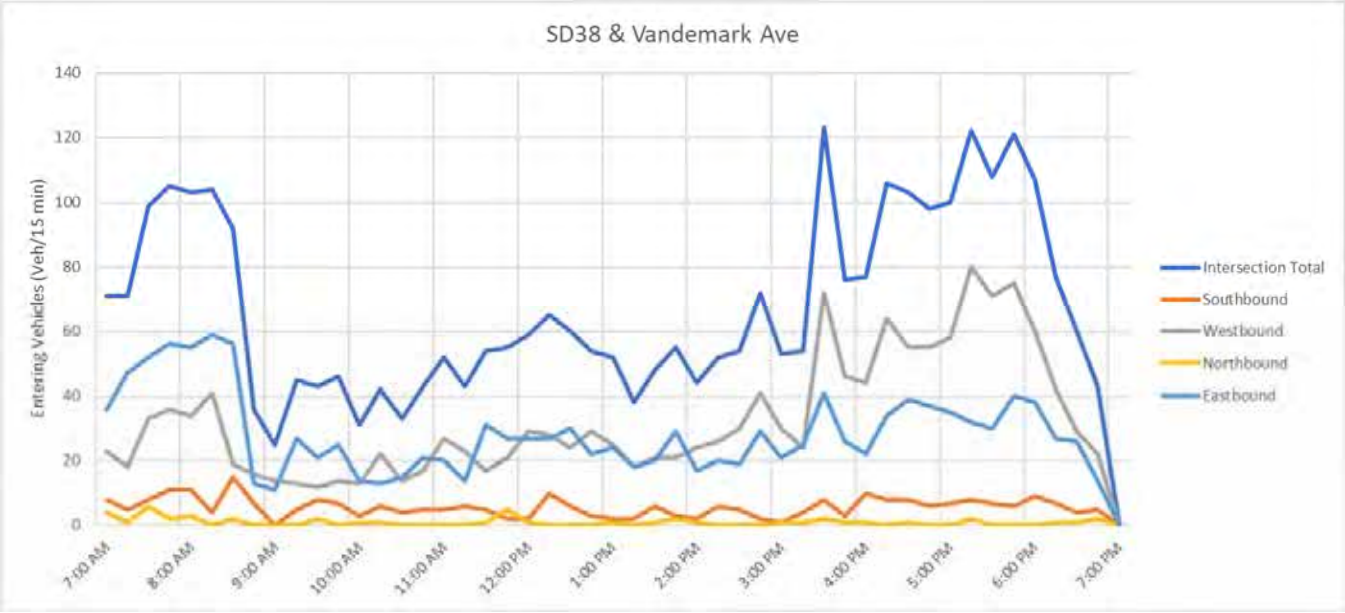


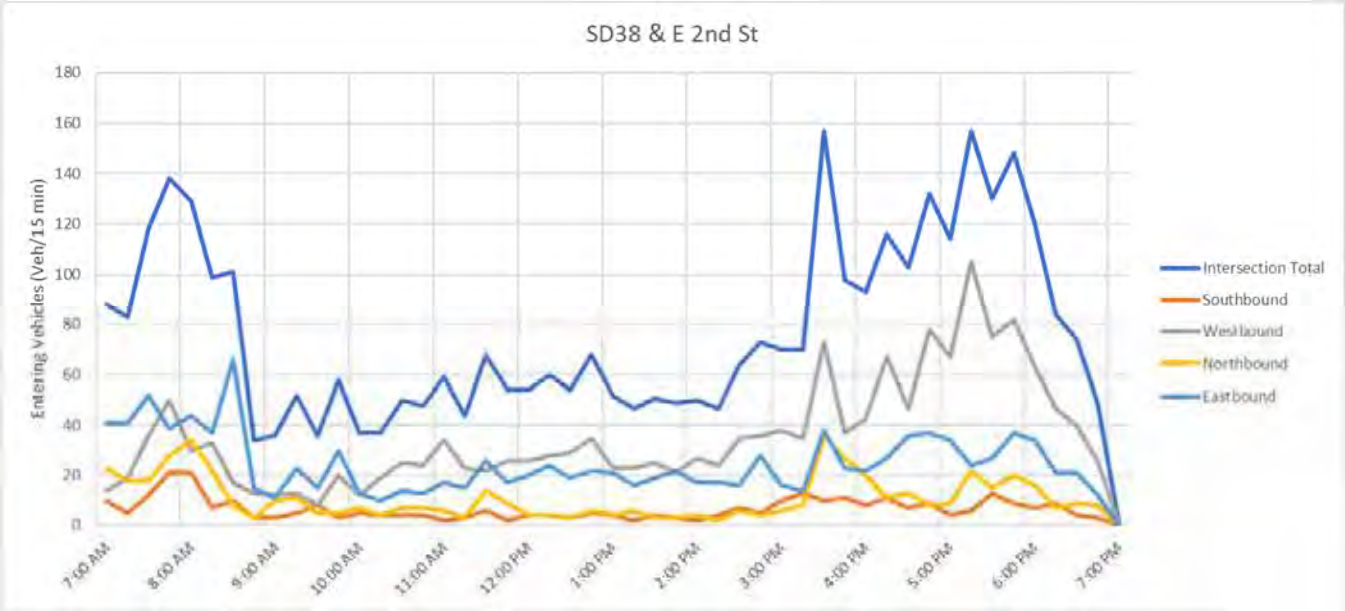


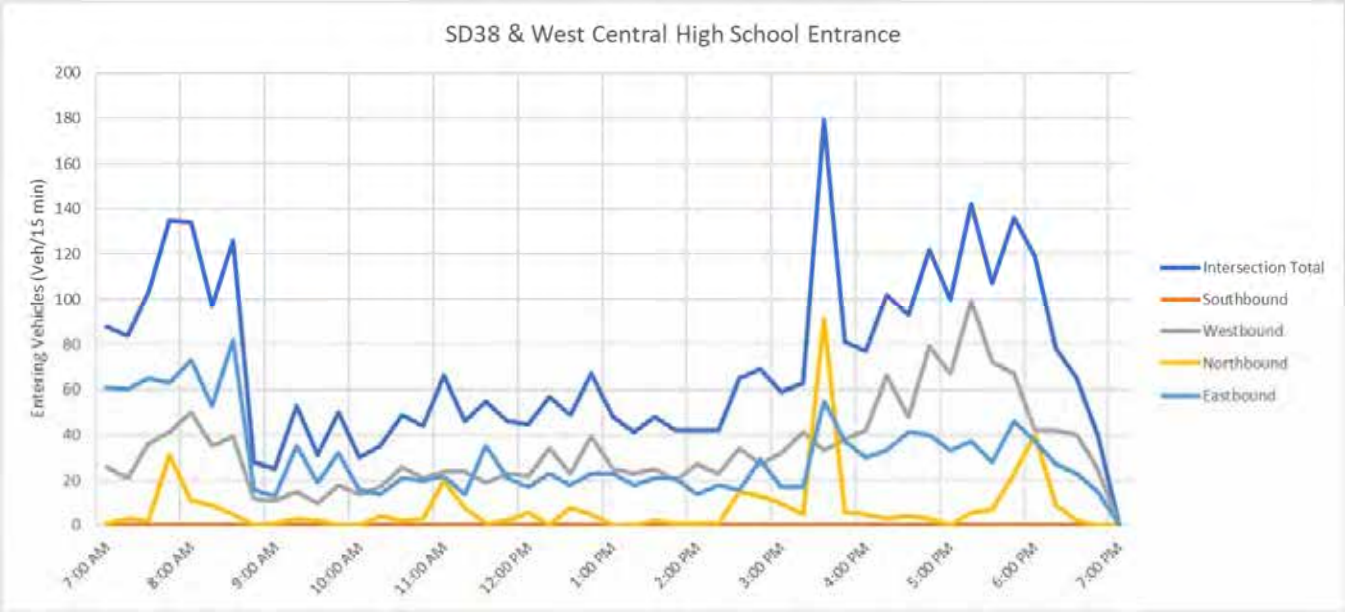
SD38 & Entrance to I-90 Speedway
Entering Vehicles (Veh/15 min)
90
80
70
60
50
40
30
20
10
0
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
Intersection Total
Southbound
Westbound
Northbound
Eastbound

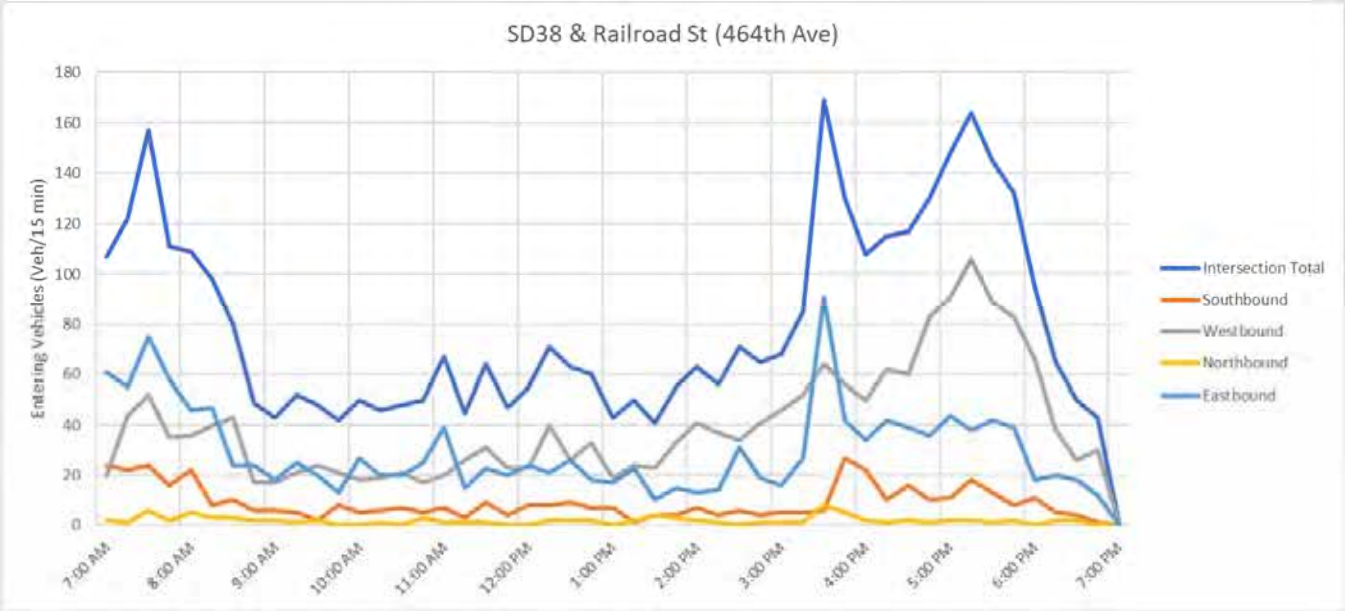

SD38 & Western Ave (463rd Ave)
Entering Vehicles (Veh/15 min)
180
160
140
120
100
80
60
40
20
0
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
Intersection Total
Southbound
Westbound
Northbound
Eastbound

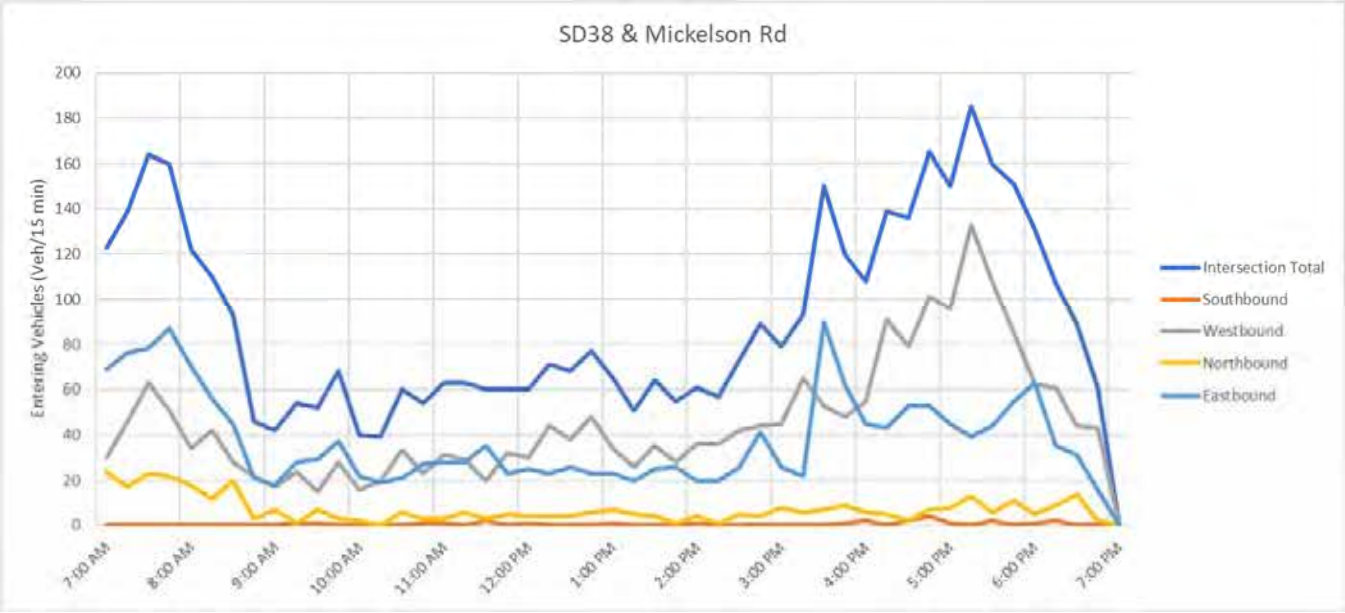

SD38 & Main Ave
Entering Vehicles (Veh/15 min)
160
140
120
100
80
60
40
20
0
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
Intersection Total
Southbound
Westbound
Northbound
Eastbound

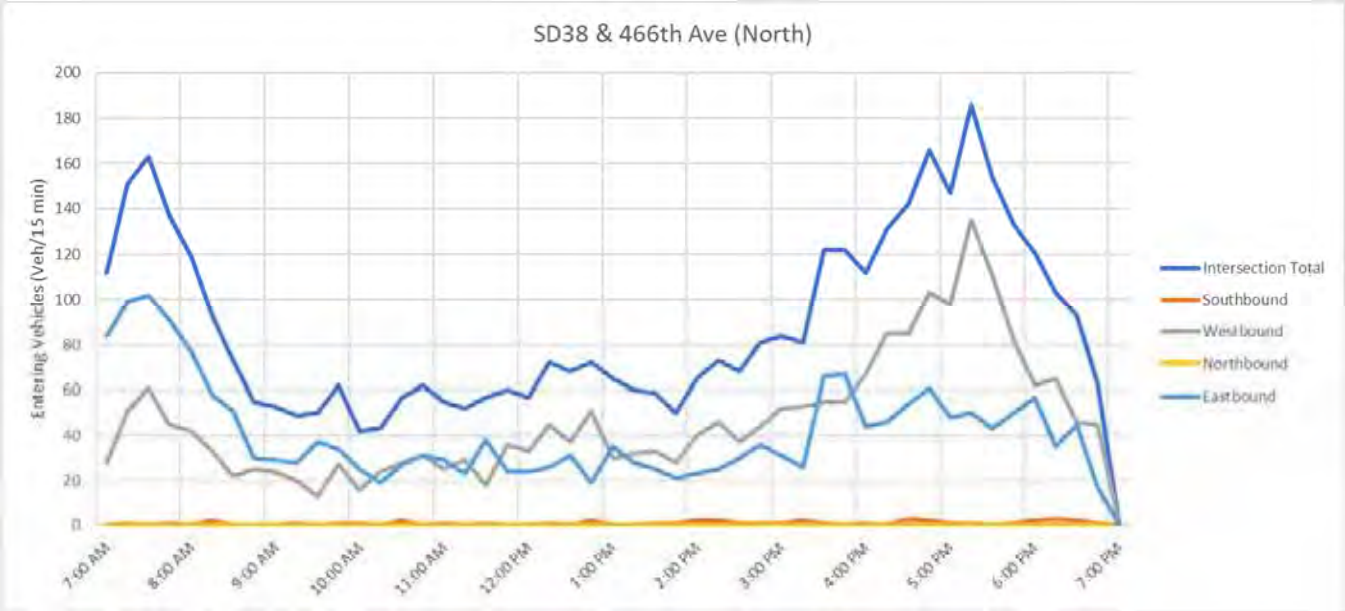

SD38 & Vandemark Ave
Entering Vehicles (Veh/15 min)
140
120
100
80
60
40
20
0
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
Intersection Total
Southbound
Westbound
Northbound
Eastbound

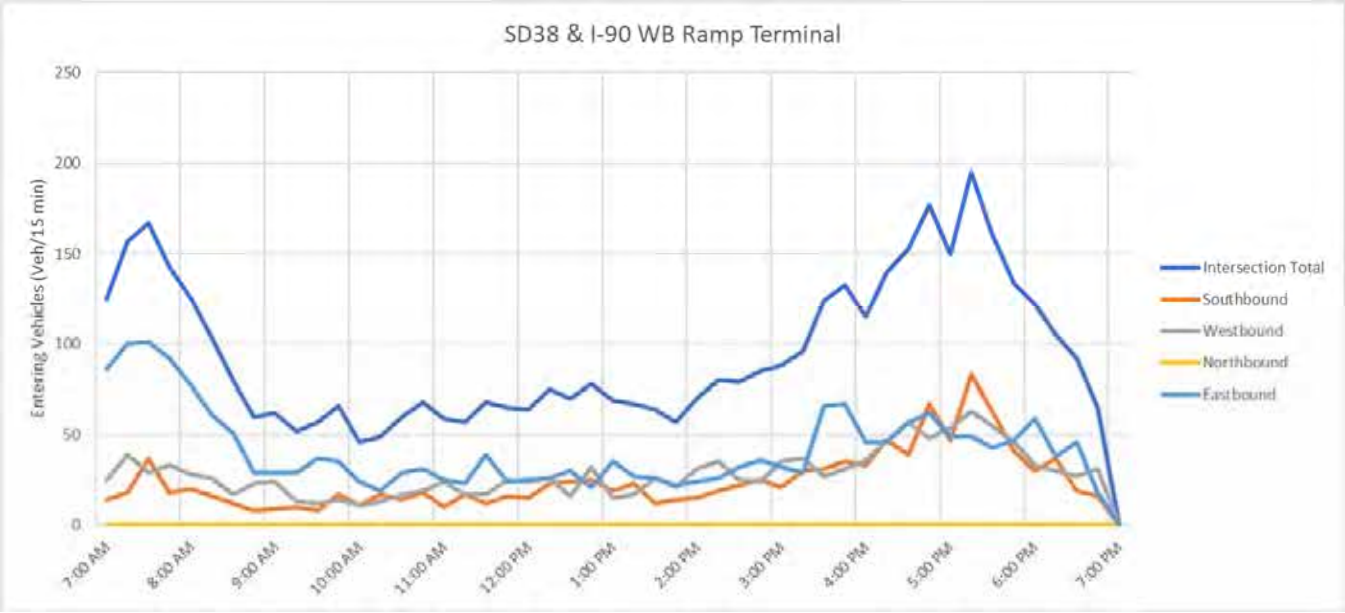

SD38 & E 2nd St
Entering Vehicles (Veh/15 min)
180
160
140
120
100
80
60
40
20
0
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
Intersection Total
Southbound
Westbound
Northbound
Eastbound

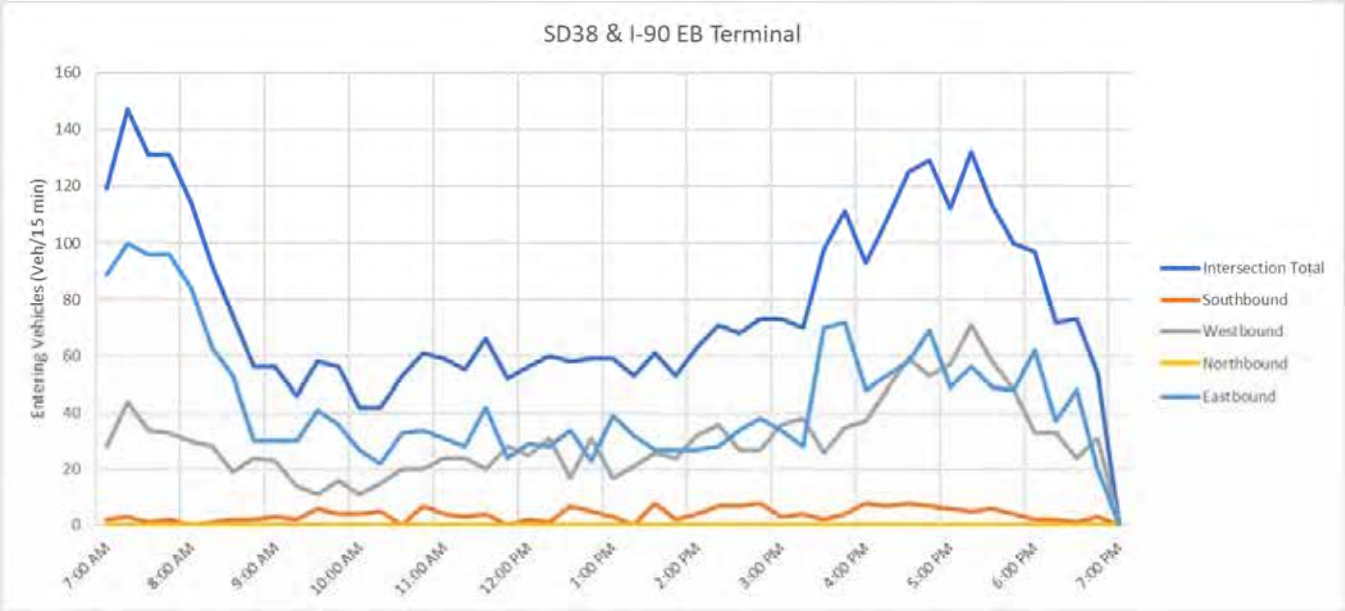

SD38 & West Central High School Entrance
Entering Vehicles (Veh/15 min)
200
180
160
140
120
100
80
60
40
20
0
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
Intersection Total
Southbound
Westbound
Northbound
Eastbound

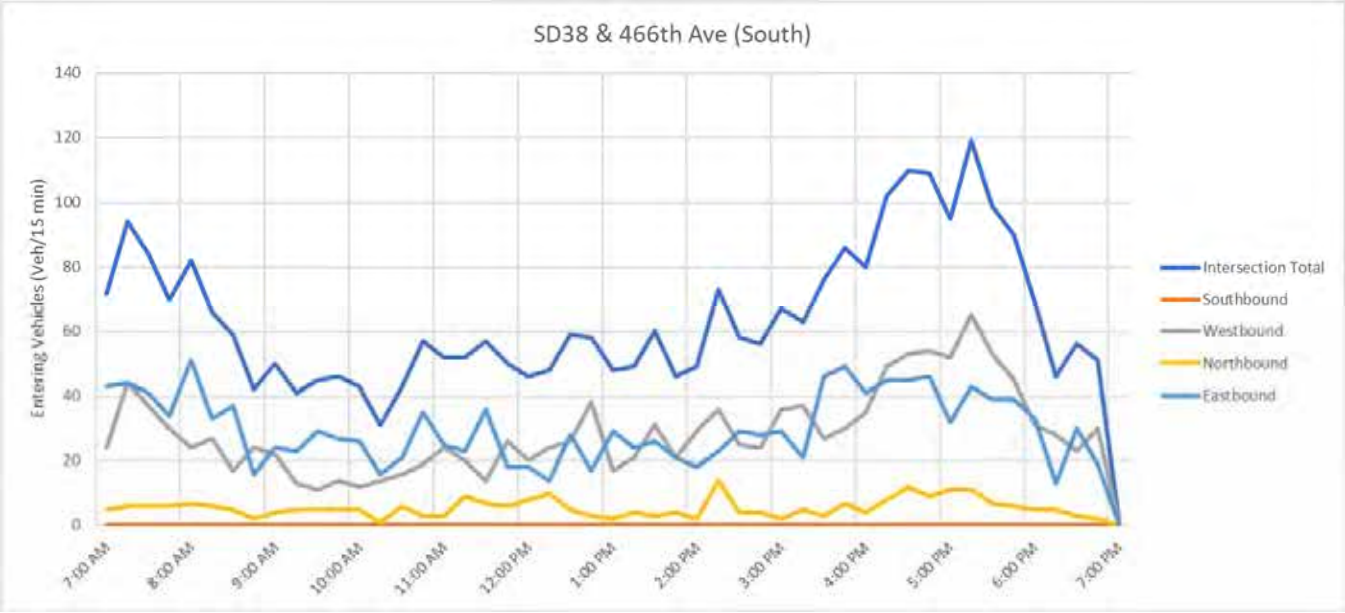

SD38 & Railroad St (464th Ave)
Entering Vehicles (Veh/15 min)
180
160
140
120
100
80
60
40
20
0
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
Intersection Total
Southbound
Westbound
Northbound
Eastbound

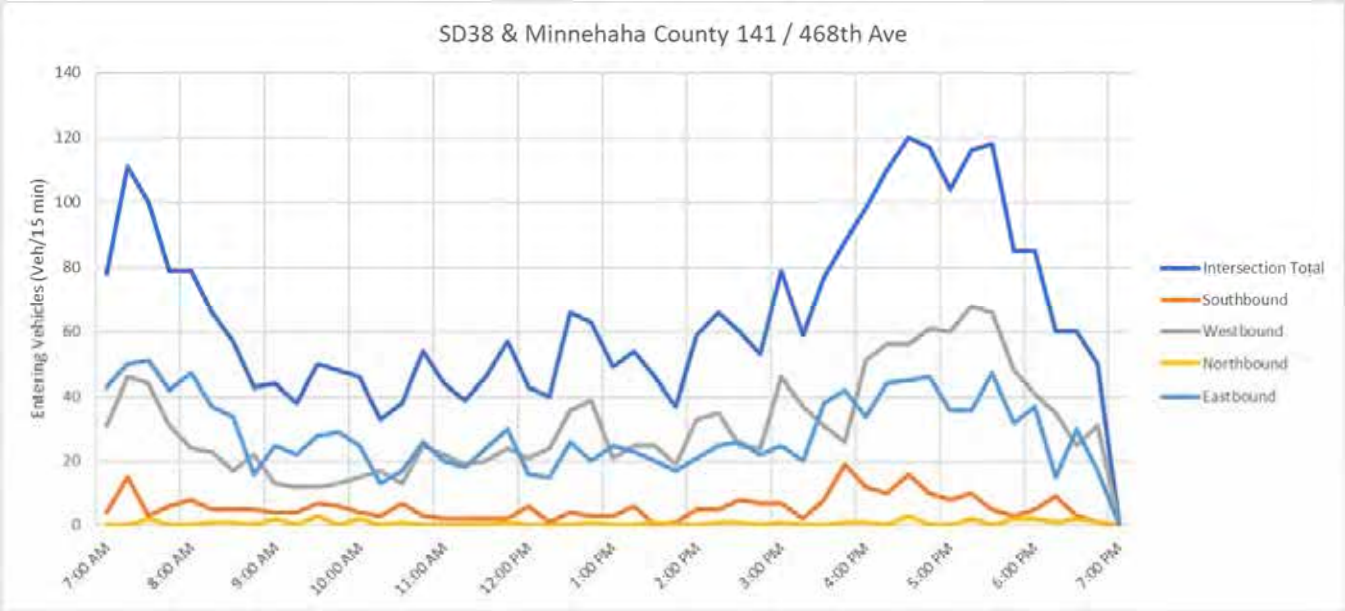

SD38 & Mickelson Rd
Entering Vehicles (Veh/15 min)
200
180
160
140
120
100
80
60
40
20
0
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
Intersection Total
Southbound
Westbound
Northbound
Eastbound

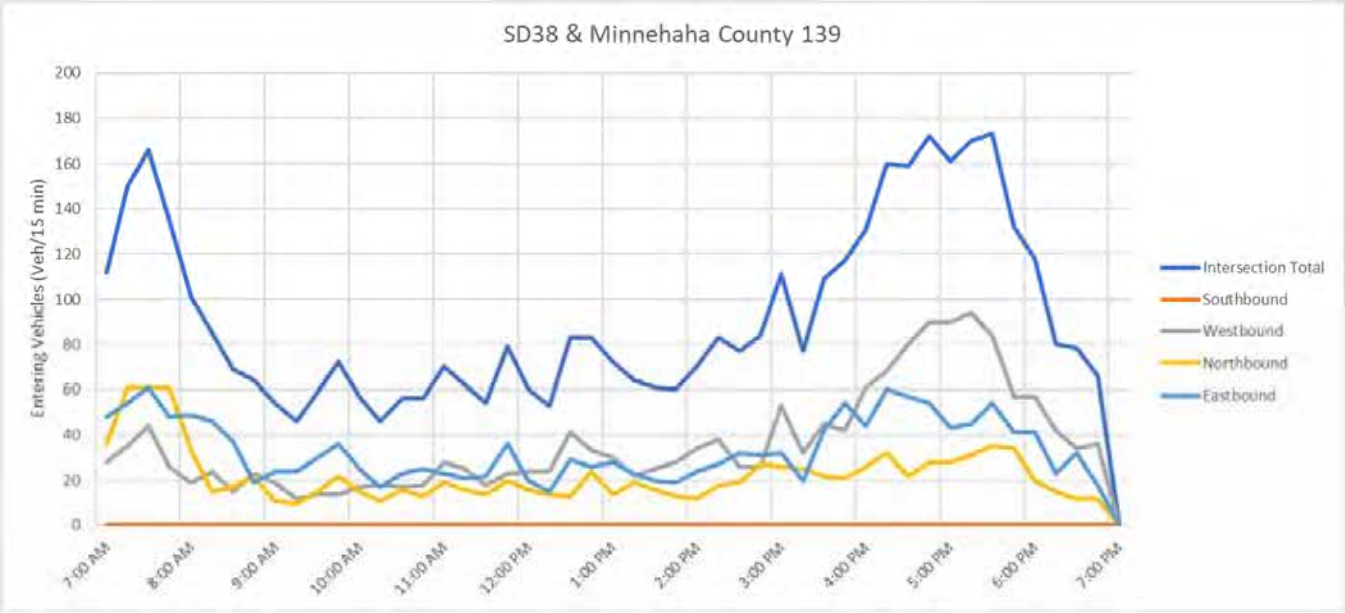

SD38 & 466th Ave (North)
Entering Vehicles (Veh/15 min)
200
180
160
140
120
100
80
60
40
20
0
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
Intersection Total
Southbound
Westbound
Northbound
Eastbound

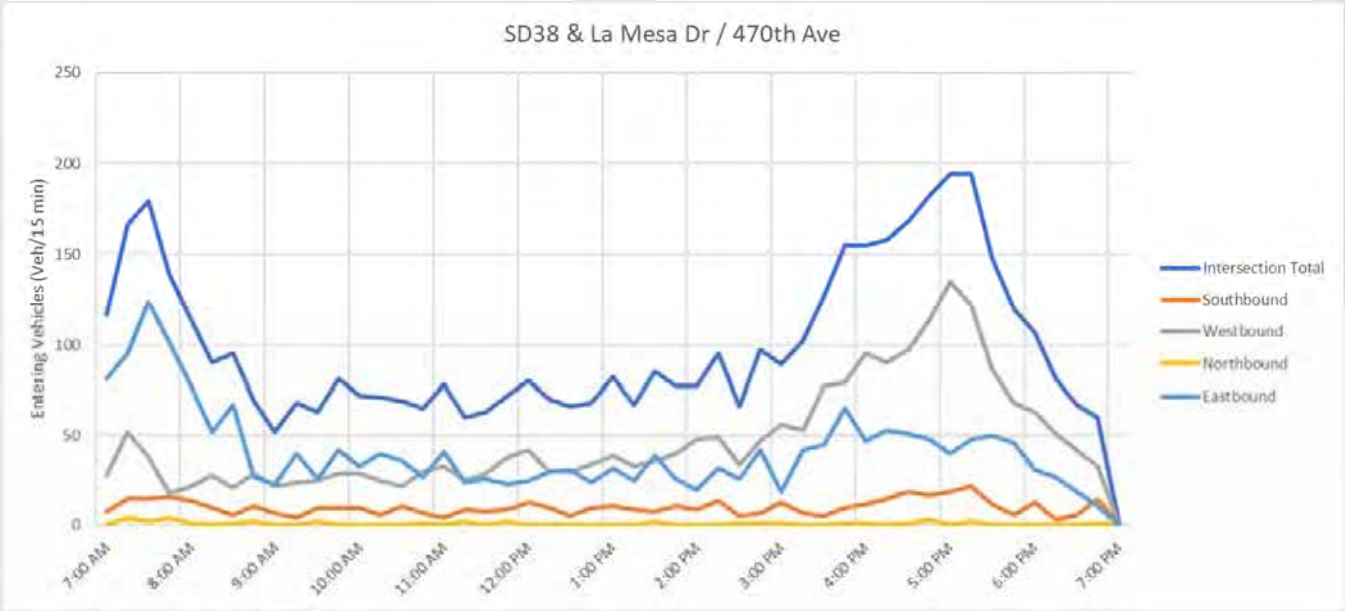

SD38 & I-90 WB Ramp Terminal
Entering Vehicles (Veh/15 min)
250
200
150
100
50
0
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
Intersection Total
Southbound
Westbound
Northbound
Eastbound

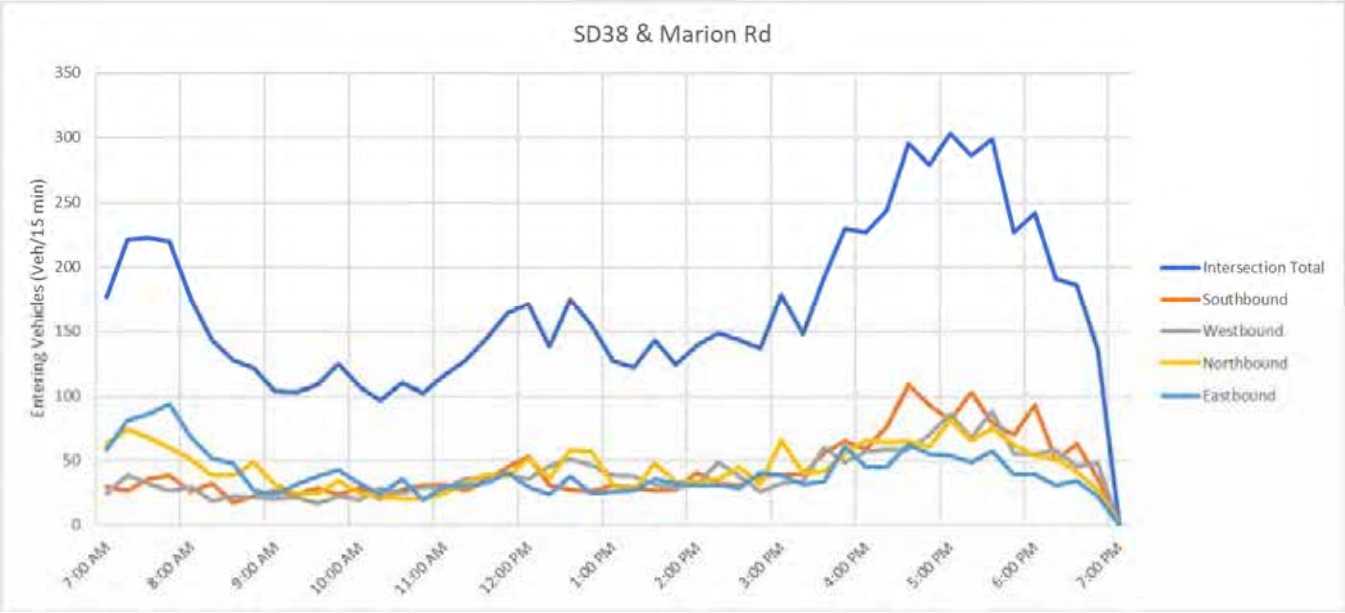

SD38 & I-90 EB Terminal
Entering Vehicles (Veh/15 min)
160
140
120
100
80
60
40
20
0
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
Intersection Total
Southbound
Westbound
Northbound
Eastbound


SD38 & 466th Ave (South)
Entering Vehicles (Veh/15 min)
140
120
100
80
60
40
20
0
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
Intersection Total
Southbound
Westbound
Northbound
Eastbound


SD38 & Minnehaha County 141 / 468th Ave
Entering Vehicles (Veh/15 min)
140
120
100
80
60
40
20
0
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
Intersection Total
Southbound
Westbound
Northbound
Eastbound


SD38 & Minnehaha County 139
Entering Vehicles (Veh/15 min)
200
180
160
140
120
100
80
60
40
20
0
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
Intersection Total
Southbound
Westbound
Northbound
Eastbound


SD38 & La Mesa Dr / 470th Ave
Entering Vehicles (Veh/15 min)
250
200
150
100
50
0
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
Intersection Total
Southbound
Westbound
Northbound
Eastbound


SD38 & Marion Rd
Entering Vehicles (Veh/15 min)
350
300
250
200
150
100
50
0
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
Intersection Total
Southbound
Westbound
Northbound
Eastbound

Appendix B – HCS Output

HCS Two-Way Stop-Control Report

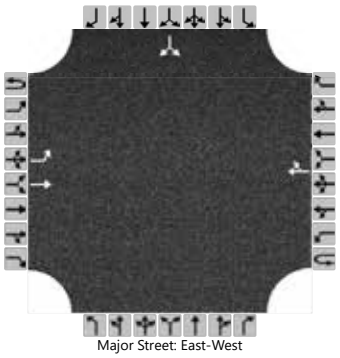
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & SD 19
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	SD 19
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	T					TR							LR	
Volume (veh/h)		30	85				55	30						40		55
Percent Heavy Vehicles (%)		30												9		11
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.40												6.49		6.31
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.47												3.58		3.40

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		33													106	
Capacity, c (veh/h)		1341													839	
v/c Ratio		0.02													0.13	
95% Queue Length, Q_{95} (veh)		0.1													0.4	
Control Delay (s/veh)		7.8													9.9	
Level of Service (LOS)		A													A	
Approach Delay (s/veh)		2.0												9.9		
Approach LOS		A												A		

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HCS Two-Way Stop-Control Report

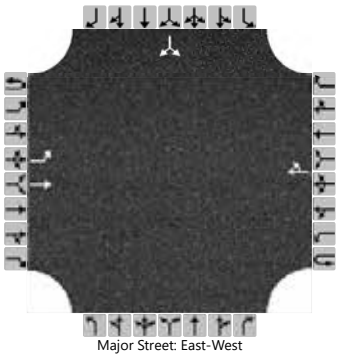
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & SD 19
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	SD 19
Peak Hour Factor	0.83
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	T					TR							LR	
Volume (veh/h)		50	55				90	45						20		30
Percent Heavy Vehicles (%)		2												10		14
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.12												6.50		6.34
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.22												3.59		3.43

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		60													60	
Capacity, c (veh/h)		1415													759	
v/c Ratio		0.04													0.08	
95% Queue Length, Q_{95} (veh)		0.1													0.3	
Control Delay (s/veh)		7.7													10.2	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)	3.6												10.2			
Approach LOS	A												B			

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HCS Two-Way Stop-Control Report

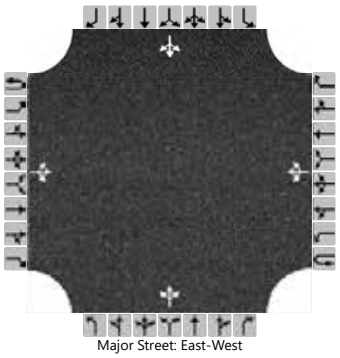
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 459th
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	459th Ave
Peak Hour Factor	0.85
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	115	4		1	75	0		8	0	4		5	0	0
Percent Heavy Vehicles (%)		3				3				13	0	0		0	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.23	6.50	6.20		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.62	4.00	3.30		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				1					14				6	
Capacity, c (veh/h)		1501				1437					763				729	
v/c Ratio		0.00				0.00					0.02				0.01	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.1				0.0	
Control Delay (s/veh)		7.4	0.0	0.0		7.5	0.0	0.0			9.8				10.0	
Level of Service (LOS)		A	A	A		A	A	A			A				A	
Approach Delay (s/veh)	0.0				0.1				9.8				10.0			
Approach LOS	A				A				A				A			

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HCS Two-Way Stop-Control Report

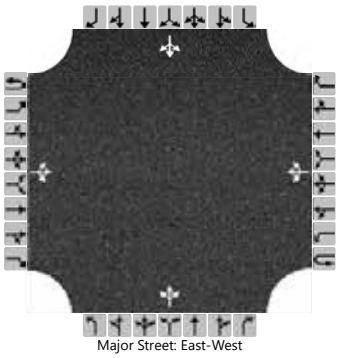
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 459th
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	459th Ave
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	70	5		7	130	1		8	0	2		1	1	0
Percent Heavy Vehicles (%)		0				0				13	0	0		0	100	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.23	6.50	6.20		7.10	7.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.62	4.00	3.30		3.50	4.90	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				8					11				2	
Capacity, c (veh/h)		1449				1526					730				600	
v/c Ratio		0.00				0.01					0.02				0.00	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.0	
Control Delay (s/veh)		7.5	0.0	0.0		7.4	0.0	0.0			10.0				11.0	
Level of Service (LOS)		A	A	A		A	A	A			B				B	
Approach Delay (s/veh)	0.0				0.4				10.0				11.0			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

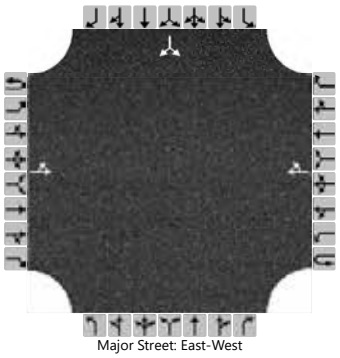
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 Expressway
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 Expressway
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	120				80	0						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage					Undivided											

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													0	
Capacity, c (veh/h)		1500													0	
v/c Ratio		0.00														
95% Queue Length, Q_{95} (veh)		0.0														
Control Delay (s/veh)		7.4	0.0													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)		0.0														
Approach LOS		A														

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HCS Two-Way Stop-Control Report

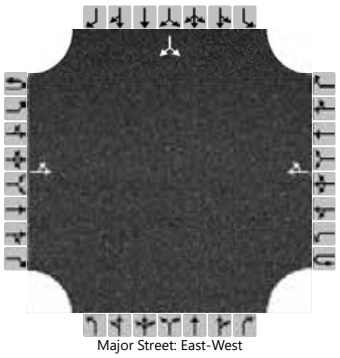
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 Expressway
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 Expressway
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	80				140	0						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage					Undivided											

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													0	
Capacity, c (veh/h)		1418													0	
v/c Ratio		0.00														
95% Queue Length, Q_{95} (veh)		0.0														
Control Delay (s/veh)		7.5	0.0													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)		0.0														
Approach LOS		A														

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HCS Two-Way Stop-Control Report

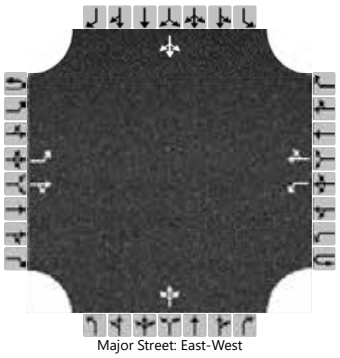
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 463rd Ave / Western Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	463rd Ave / Western Ave
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		5	90	45		30	50	15		35	45	45		20	45	3
Percent Heavy Vehicles (%)		3				3				14	2	6		0	7	33
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.24	6.52	6.26		7.10	6.57	6.53
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.63	4.02	3.35		3.50	4.06	3.60

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		6				33					139				76	
Capacity, c (veh/h)		1521				1425					682				601	
v/c Ratio		0.00				0.02					0.20				0.13	
95% Queue Length, Q_{95} (veh)		0.0				0.1					0.8				0.4	
Control Delay (s/veh)		7.4				7.6					11.6				11.9	
Level of Service (LOS)		A				A					B				B	
Approach Delay (s/veh)	0.3				2.4				11.6				11.9			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

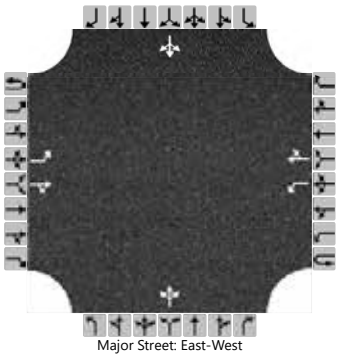
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 463rd Ave / Western Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	463rd Ave / Western Ave
Peak Hour Factor	0.89
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		9	60	30		65	105	30		40	50	85		30	55	15
Percent Heavy Vehicles (%)		22				3				0	11	4		0	4	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.32				4.13				7.10	6.61	6.24		7.10	6.54	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.40				2.23				3.50	4.10	3.34		3.50	4.04	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		10				73					197				112	
Capacity, c (veh/h)		1316				1485					635				512	
v/c Ratio		0.01				0.05					0.31				0.22	
95% Queue Length, Q_{95} (veh)		0.0				0.2					1.3				0.8	
Control Delay (s/veh)		7.8				7.5					13.2				14.0	
Level of Service (LOS)		A				A					B				B	
Approach Delay (s/veh)	0.7				2.5				13.2				14.0			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

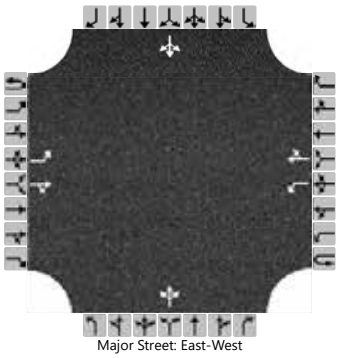
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Main Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Main Ave (9th St)
Peak Hour Factor	0.80
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		1	135	20		20	90	7		20	3	45		1	6	2
Percent Heavy Vehicles (%)		0				11				5	0	2		0	17	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.21				7.15	6.50	6.22		7.10	6.67	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.30				3.55	4.00	3.32		3.50	4.15	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		1				25					85				11	
Capacity, c (veh/h)		1479				1327					738				592	
v/c Ratio		0.00				0.02					0.12				0.02	
95% Queue Length, Q_{95} (veh)		0.0				0.1					0.4				0.1	
Control Delay (s/veh)		7.4				7.8					10.5				11.2	
Level of Service (LOS)		A				A					B				B	
Approach Delay (s/veh)	0.0				1.3				10.5				11.2			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

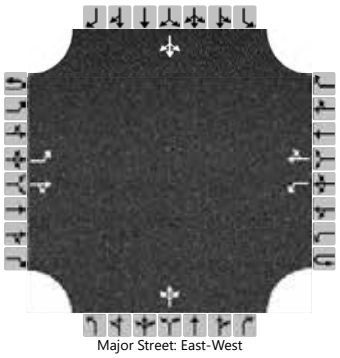
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Main Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Main Ave (9th St)
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		6	125	25		35	175	30		20	10	30		20	15	4
Percent Heavy Vehicles (%)		0				0				5	0	0		0	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.15	6.50	6.20		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.55	4.00	3.30		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		7				39					67				43	
Capacity, c (veh/h)		1352				1424					626				501	
v/c Ratio		0.00				0.03					0.11				0.09	
95% Queue Length, Q_{95} (veh)		0.0				0.1					0.4				0.3	
Control Delay (s/veh)		7.7				7.6					11.4				12.9	
Level of Service (LOS)		A				A					B				B	
Approach Delay (s/veh)	0.3				1.1				11.4				12.9			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

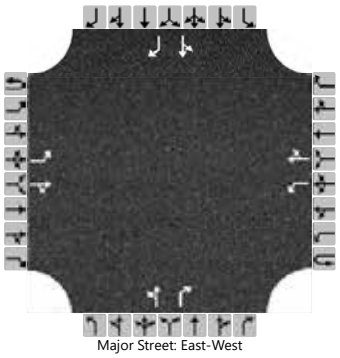
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	AM
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Vandemark Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Vandemark Avenue
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	1		0	1	1
Configuration		L		TR		L		TR		LT		R		LT		R
Volume (veh/h)		15	190	6		1	110	11		5	3	4		20	1	15
Percent Heavy Vehicles (%)		0				0				40	0	0		0	0	7
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized										No				No		
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.50	6.50	6.20		7.10	6.50	6.27
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.86	4.00	3.30		3.50	4.00	3.36

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		17				1				9		4		23		17
Capacity, c (veh/h)		1463				1364				519		831		570		908
v/c Ratio		0.01				0.00				0.02		0.01		0.04		0.02
95% Queue Length, Q_{95} (veh)		0.0				0.0				0.1		0.0		0.1		0.1
Control Delay (s/veh)		7.5				7.6				12.1		9.4		11.6		9.0
Level of Service (LOS)		A				A				B		A		B		A
Approach Delay (s/veh)	0.5				0.1				11.2				10.5			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

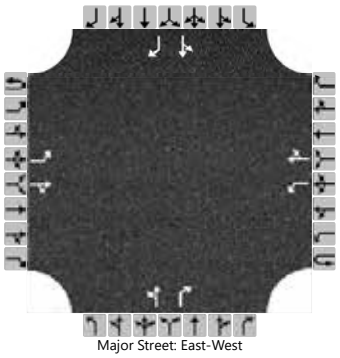
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	AM
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Vandemark Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Vandemark Avenue
Peak Hour Factor	0.88
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	1		0	1	1
Configuration		L		TR		L		TR		LT		R		LT		R
Volume (veh/h)		10	120	2		0	245	20		0	0	2		15	0	15
Percent Heavy Vehicles (%)		0				0				0	0	100		0	0	7
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized										No				No		
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	7.20		7.10	6.50	6.27
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	4.20		3.50	4.00	3.36

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11				0				0		2		17		17
Capacity, c (veh/h)		1271				1457				0		705		517		738
v/c Ratio		0.01				0.00						0.00		0.03		0.02
95% Queue Length, Q_{95} (veh)		0.0				0.0						0.0		0.1		0.1
Control Delay (s/veh)		7.9				7.5						10.1		12.2		10.0
Level of Service (LOS)		A				A						B		B		A
Approach Delay (s/veh)	0.6				0.0								11.1			
Approach LOS	A				A								B			

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HCS Two-Way Stop-Control Report

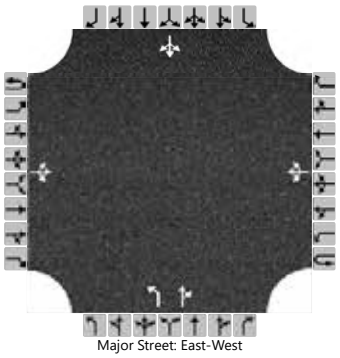
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 2nd St
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	2nd St
Peak Hour Factor	0.85
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		1	1	0		0	1	0
Configuration			LTR				LTR			L		TR			LTR	
Volume (veh/h)		10	160	6		50	80	5		3	15	85		20	30	3
Percent Heavy Vehicles (%)		10				16				33	8	5		0	4	8
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.20				4.26				7.43	6.58	6.25		7.10	6.54	6.28
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.29				2.34				3.80	4.07	3.35		3.50	4.04	3.37

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		12				59				4		118			62	
Capacity, c (veh/h)		1415				1298				414		751			463	
v/c Ratio		0.01				0.05				0.01		0.16			0.13	
95% Queue Length, Q_{95} (veh)		0.0				0.1				0.0		0.6			0.5	
Control Delay (s/veh)		7.6	0.1	0.1		7.9	0.4	0.4		13.8		10.7			14.0	
Level of Service (LOS)		A	A	A		A	A	A		B		B			B	
Approach Delay (s/veh)	0.5				3.2				10.8				14.0			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

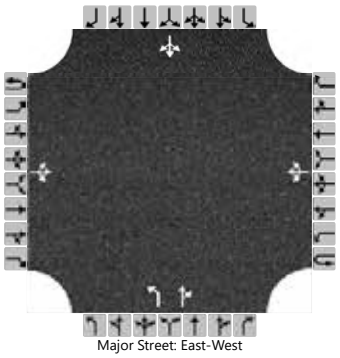
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 2nd St
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	2nd St
Peak Hour Factor	0.85
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		1	1	0		0	1	0
Configuration			LTR				LTR			L		TR			LTR	
Volume (veh/h)		15	100	5		70	245	10		7	15	30		5	15	10
Percent Heavy Vehicles (%)		0				0				0	0	6		0	6	0
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.26		7.10	6.56	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.35		3.50	4.05	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		18				82				8		53			35	
Capacity, c (veh/h)		1248				1476				349		610			425	
v/c Ratio		0.01				0.06				0.02		0.09			0.08	
95% Queue Length, Q_{95} (veh)		0.0				0.2				0.1		0.3			0.3	
Control Delay (s/veh)		7.9	0.1	0.1		7.6	0.5	0.5		15.6		11.5			14.2	
Level of Service (LOS)		A	A	A		A	A	A		C		B			B	
Approach Delay (s/veh)	1.1				2.0				12.0				14.2			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

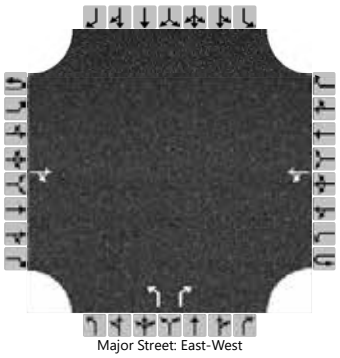
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & West Central HS Entrance
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	West Central HS Entrance
Peak Hour Factor	0.84
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		1	0	1		0	0	0
Configuration				TR		LT				L		R				
Volume (veh/h)			210	50		30	120			20		30				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						36				24		36				
Capacity, c (veh/h)						1262				522		764				
v/c Ratio						0.03				0.05		0.05				
95% Queue Length, Q_{95} (veh)						0.1				0.1		0.1				
Control Delay (s/veh)						7.9	0.2			12.2		9.9				
Level of Service (LOS)						A	A			B		A				
Approach Delay (s/veh)						1.8				10.9						
Approach LOS						A				B						

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HCS Two-Way Stop-Control Report

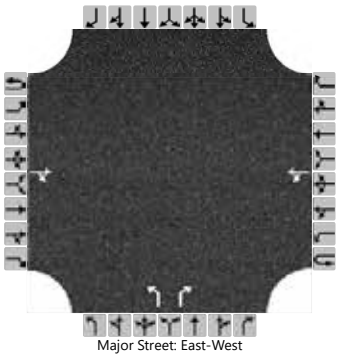
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & West Central HS Entrance
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	West Central HS Entrance
Peak Hour Factor	0.83
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		1	0	1		0	0	0
Configuration				TR		LT				L		R				
Volume (veh/h)			135	2		2	315			8		8				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						2				10		10				
Capacity, c (veh/h)						1425				500		886				
v/c Ratio						0.00				0.02		0.01				
95% Queue Length, Q_{95} (veh)						0.0				0.1		0.0				
Control Delay (s/veh)						7.5	0.0			12.3		9.1				
Level of Service (LOS)						A	A			B		A				
Approach Delay (s/veh)					0.1				10.7							
Approach LOS					A				B							

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HCS Two-Way Stop-Control Report

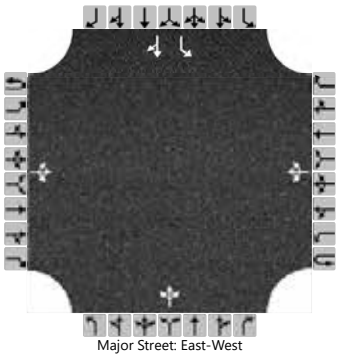
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Railroad Street
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Railroad St
Peak Hour Factor	0.79
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		1	1	0
Configuration			LTR				LTR				LTR			L		TR
Volume (veh/h)		2	230	0		5	110	50		1	0	15		80	2	3
Percent Heavy Vehicles (%)		0				0				0	0	15		0	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.35		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.44		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		3				6					20			101		6
Capacity, c (veh/h)		1381				1282					701			483		663
v/c Ratio		0.00				0.00					0.03			0.21		0.01
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.1			0.8		0.0
Control Delay (s/veh)		7.6	0.0	0.0		7.8	0.0	0.0			10.3			14.4		10.5
Level of Service (LOS)		A	A	A		A	A	A			B			B		B
Approach Delay (s/veh)	0.1				0.3				10.3				14.2			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

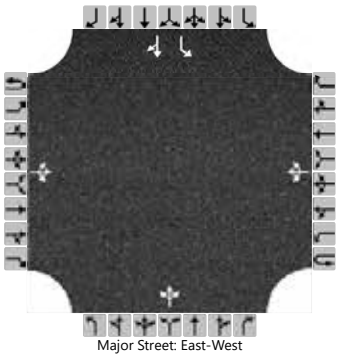
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Railroad Street
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Railroad St
Peak Hour Factor	0.89
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		1	1	0
Configuration			LTR				LTR				LTR			L		TR
Volume (veh/h)		2	155	2		5	280	85		1	1	4		45	5	3
Percent Heavy Vehicles (%)		0				40				0	0	15		5	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.50				7.10	6.50	6.35		7.15	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.56				3.50	4.00	3.44		3.55	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2				6					7			51		9
Capacity, c (veh/h)		1160				1200					641			432		508
v/c Ratio		0.00				0.00					0.01			0.12		0.02
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0			0.4		0.1
Control Delay (s/veh)		8.1	0.0	0.0		8.0	0.0	0.0			10.7			14.4		12.2
Level of Service (LOS)		A	A	A		A	A	A			B			B		B
Approach Delay (s/veh)	0.1				0.2				10.7				14.1			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

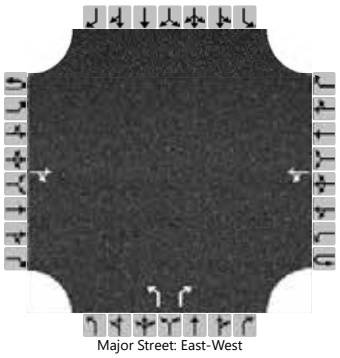
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 260th St (Mickelson Rd)
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	260th St (Mikelson Rd)
Peak Hour Factor	0.89
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		1	0	1		0	0	0
Configuration				TR		LT				L		R				
Volume (veh/h)			290	20		25	170			25		55				
Percent Heavy Vehicles (%)						26				4		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.36				6.44		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.43				3.54		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						28				28		62				
Capacity, c (veh/h)						1089				457		703				
v/c Ratio						0.03				0.06		0.09				
95% Queue Length, Q_{95} (veh)						0.1				0.2		0.3				
Control Delay (s/veh)						8.4	0.2			13.4		10.6				
Level of Service (LOS)						A	A			B		B				
Approach Delay (s/veh)					1.3				11.5							
Approach LOS					A				B							

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HCS Two-Way Stop-Control Report

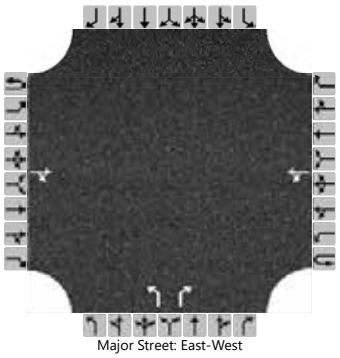
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 260th St (Mickelson Rd)
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	260th St (Mikelson Rd)
Peak Hour Factor	0.89
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		1	0	1		0	0	0
Configuration				TR		LT				L		R				
Volume (veh/h)			170	10		75	365			10		25				
Percent Heavy Vehicles (%)						1				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.11				6.40		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.21				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						84				11		28				
Capacity, c (veh/h)						1376				340		850				
v/c Ratio						0.06				0.03		0.03				
95% Queue Length, Q_{95} (veh)						0.2				0.1		0.1				
Control Delay (s/veh)						7.8	0.6			16.0		9.4				
Level of Service (LOS)						A	A			C		A				
Approach Delay (s/veh)					1.8				11.3							
Approach LOS					A				B							

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HCS Two-Way Stop-Control Report

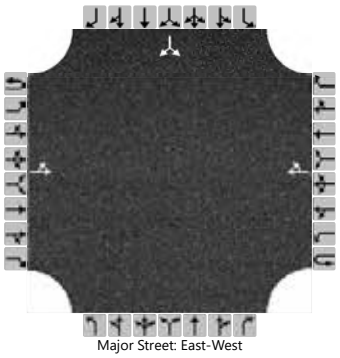
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD38 & 466th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	466th Ave
Peak Hour Factor	0.87
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		1	370				195	3						2		0
Percent Heavy Vehicles (%)		0												50		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.90		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.95		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		1													2	
Capacity, c (veh/h)		1353													365	
v/c Ratio		0.00													0.01	
95% Queue Length, Q_{95} (veh)		0.0													0.0	
Control Delay (s/veh)		7.7	0.0												14.9	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)		0.0												14.9		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

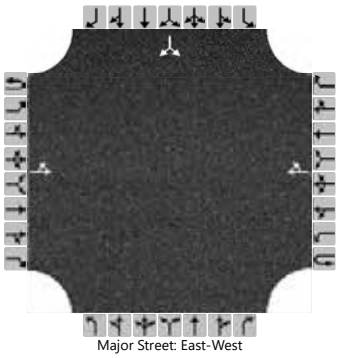
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD38 & 466th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	466th Ave
Peak Hour Factor	0.88
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	200				445	1						3		1
Percent Heavy Vehicles (%)		0												33		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.73		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.80		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													5	
Capacity, c (veh/h)		1068													383	
v/c Ratio		0.00													0.01	
95% Queue Length, Q_{95} (veh)		0.0													0.0	
Control Delay (s/veh)		8.4	0.0												14.5	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)		0.0												14.5		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

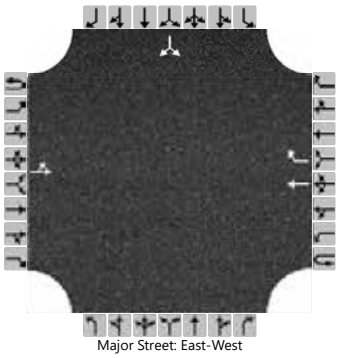
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 WB Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 WB Terminal
Peak Hour Factor	0.89
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		LT					T	R							LR	
Volume (veh/h)		4	365				120	10						9		85
Percent Heavy Vehicles (%)		0												56		12
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.96		6.32
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												4.00		3.41

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		4													106	
Capacity, c (veh/h)		1448													799	
v/c Ratio		0.00													0.13	
95% Queue Length, Q_{95} (veh)		0.0													0.5	
Control Delay (s/veh)		7.5	0.0												10.2	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)		0.1												10.2		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

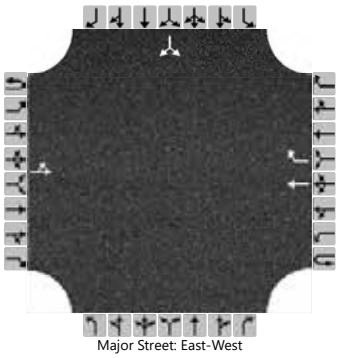
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 WB Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 WB Terminal
Peak Hour Factor	0.87
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		LT					T	R							LR	
Volume (veh/h)		1	200				200	20						15		245
Percent Heavy Vehicles (%)		0												6		2
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage							Undivided									

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.46		6.22
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.55		3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		1													299	
Capacity, c (veh/h)		1324													788	
v/c Ratio		0.00													0.38	
95% Queue Length, Q_{95} (veh)		0.0													1.8	
Control Delay (s/veh)		7.7	0.0												12.3	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)		0.0												12.3		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

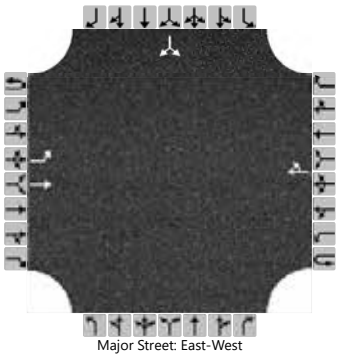
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 EB Ramp Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 EB Ramp Terminal
Peak Hour Factor	0.89
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	T					TR							LR	
Volume (veh/h)		210	165				130	10						3		3
Percent Heavy Vehicles (%)		1												33		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.11												6.73		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.21												3.80		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		236													7	
Capacity, c (veh/h)		1429													402	
v/c Ratio		0.17													0.02	
95% Queue Length, Q_{95} (veh)		0.6													0.1	
Control Delay (s/veh)		8.0													14.1	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)	4.5												14.1			
Approach LOS	A												B			

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HCS Two-Way Stop-Control Report

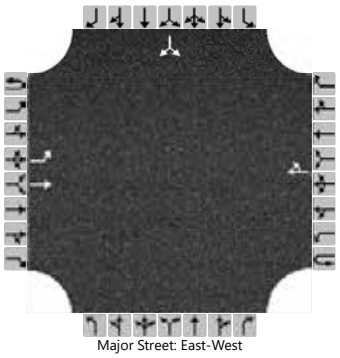
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 EB Ramp Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 EB Ramp Terminal
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	T					TR							LR	
Volume (veh/h)		85	140				225	15						20		1
Percent Heavy Vehicles (%)		12												36		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.22												6.76		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.31												3.82		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		94													23	
Capacity, c (veh/h)		1241													389	
v/c Ratio		0.08													0.06	
95% Queue Length, Q_{95} (veh)		0.2													0.2	
Control Delay (s/veh)		8.1													14.8	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)	3.1												14.8			
Approach LOS	A												B			

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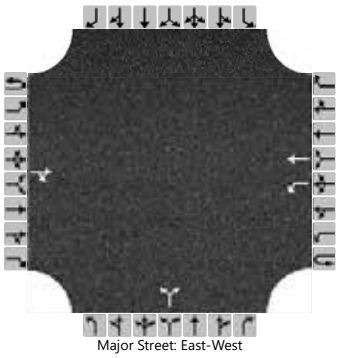
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	MJV	Intersection	SD 38 & 466th Ave (South)
Agency/Co.	HRG	Jurisdiction	SDDOT
Date Performed	12/28/2022	East/West Street	SD 38
Analysis Year	2022	North/South Street	466th Ave (South)
Time Analyzed	AM Peak	Peak Hour Factor	0.88
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	SD 38		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			160	10		10	125			15		10				
Percent Heavy Vehicles (%)						20				33		60				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.30				6.73		6.80				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.38				3.80		3.84				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11					28					
Capacity, c (veh/h)						1279					632					
v/c Ratio						0.01					0.04					
95% Queue Length, Q_{95} (veh)						0.0					0.1					
Control Delay (s/veh)						7.8					11.0					
Level of Service (LOS)						A					B					
Approach Delay (s/veh)					0.6				11.0							
Approach LOS					A				B							

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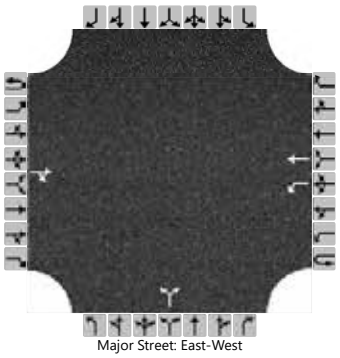
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	MJV	Intersection	SD 38 & 466th Ave (South)
Agency/Co.	HRG	Jurisdiction	SDDOT
Date Performed	12/28/2022	East/West Street	SD 38
Analysis Year	2022	North/South Street	466th Ave (South)
Time Analyzed	PM Peak	Peak Hour Factor	0.89
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	SD 38		

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			150	10		9	215			25		15				
Percent Heavy Vehicles (%)						11				20		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.21				6.60		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.30				3.68		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						10					45					
Capacity, c (veh/h)						1343					631					
v/c Ratio						0.01					0.07					
95% Queue Length, Q_{95} (veh)						0.0					0.2					
Control Delay (s/veh)						7.7					11.1					
Level of Service (LOS)						A					B					
Approach Delay (s/veh)					0.3				11.1							
Approach LOS					A				B							

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HCS Two-Way Stop-Control Report

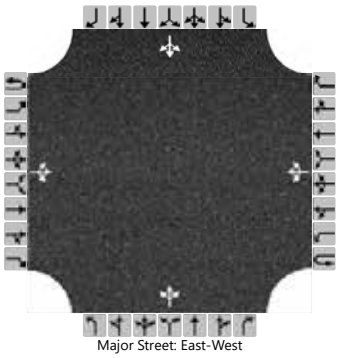
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 468th Avenue
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	468th Ave / County Highway 141
Peak Hour Factor	0.83
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		2	190	0		0	120	30		1	1	0		30	0	4
Percent Heavy Vehicles (%)		0				0				0	100	0		4	0	50
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	7.50	6.20		7.14	6.50	6.70
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.90	3.30		3.54	4.00	3.75

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2				0					2				41	
Capacity, c (veh/h)		1407				1351					476				576	
v/c Ratio		0.00				0.00					0.01				0.07	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.2	
Control Delay (s/veh)		7.6	0.0	0.0		7.7	0.0	0.0			12.6				11.7	
Level of Service (LOS)		A	A	A		A	A	A			B				B	
Approach Delay (s/veh)	0.1				0.0				12.6				11.7			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

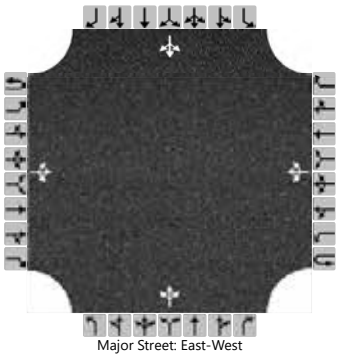
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 468th Avenue
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	468th Ave / County Highway 141
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	165	1		3	220	30		1	1	0		30	2	2
Percent Heavy Vehicles (%)		0				0				0	0	0		4	100	50
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.20		7.14	7.50	6.70
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.30		3.54	4.90	3.75

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				3					2				38	
Capacity, c (veh/h)		1297				1402					510				509	
v/c Ratio		0.00				0.00					0.00				0.07	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.2	
Control Delay (s/veh)		7.8	0.0	0.0		7.6	0.0	0.0			12.1				12.6	
Level of Service (LOS)		A	A	A		A	A	A			B				B	
Approach Delay (s/veh)	0.0				0.1				12.1				12.6			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

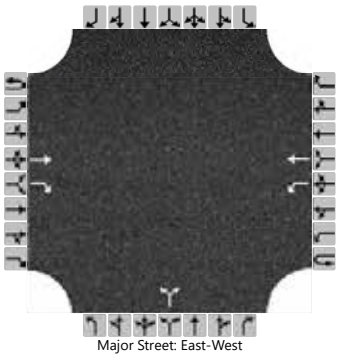
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 469th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	469th Ave / Co Hwy 139
Peak Hour Factor	0.83
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	1	1	0		0	1	0		0	0	0
Configuration			T	R		L	T				LR					
Volume (veh/h)			170	40		40	80			60		155				
Percent Heavy Vehicles (%)						5				13		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized			No													
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.15				6.53		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.25				3.62		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						48					259					
Capacity, c (veh/h)						1295					736					
v/c Ratio						0.04					0.35					
95% Queue Length, Q_{95} (veh)						0.1					1.6					
Control Delay (s/veh)						7.9					12.5					
Level of Service (LOS)						A					B					
Approach Delay (s/veh)						2.6				12.5						
Approach LOS						A				B						

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HCS Two-Way Stop-Control Report

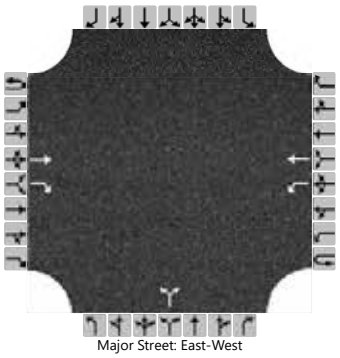
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 469th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	469th Ave / Co Hwy 139
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	1	1	0		0	1	0		0	0	0
Configuration			T	R		L	T				LR					
Volume (veh/h)			130	70		160	200			55		70				
Percent Heavy Vehicles (%)						5				2		15				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized			No													
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.15				6.42		6.35				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.25				3.52		3.44				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						178					139					
Capacity, c (veh/h)						1329					517					
v/c Ratio						0.13					0.27					
95% Queue Length, Q_{95} (veh)						0.5					1.1					
Control Delay (s/veh)						8.1					14.5					
Level of Service (LOS)						A					B					
Approach Delay (s/veh)						3.6				14.5						
Approach LOS						A				B						

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HCS Two-Way Stop-Control Report

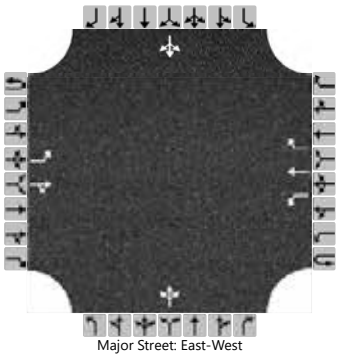
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & La Mesa
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	La Mesa
Peak Hour Factor	0.84
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		0	1	0		0	1	0
Configuration		L		TR		L	T	R			LTR				LTR	
Volume (veh/h)		20	380	2		0	120	9		0	8	3		40	2	15
Percent Heavy Vehicles (%)		0				0				0	13	0		0	50	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized						No										
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.63	6.20		7.10	7.00	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.12	3.30		3.50	4.45	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		24				0					13				68	
Capacity, c (veh/h)		1439				1117					411				434	
v/c Ratio		0.02				0.00					0.03				0.16	
95% Queue Length, Q_{95} (veh)		0.1				0.0					0.1				0.5	
Control Delay (s/veh)		7.5				8.2					14.1				14.8	
Level of Service (LOS)		A				A					B				B	
Approach Delay (s/veh)	0.4				0.0				14.1				14.8			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

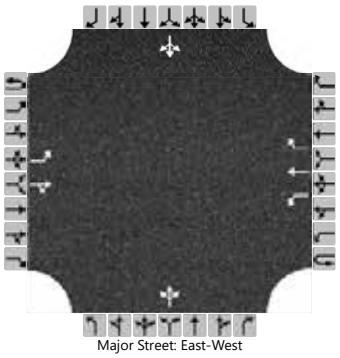
General Information

Analyst	MJV
Agency/Co.	HRG
Date Performed	12/28/2022
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & La Mesa
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	La Mesa
Peak Hour Factor	0.90
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		0	1	0		0	1	0
Configuration		L		TR		L	T	R			LTR				LTR	
Volume (veh/h)		15	175	0		5	395	55		0	2	3		45	8	20
Percent Heavy Vehicles (%)		0				0				0	0	0		9	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized						No										
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.20		7.19	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.30		3.58	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		17				6					6				81	
Capacity, c (veh/h)		1075				1391					532				397	
v/c Ratio		0.02				0.00					0.01				0.20	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.8	
Control Delay (s/veh)		8.4				7.6					11.8				16.4	
Level of Service (LOS)		A				A					B				C	
Approach Delay (s/veh)	0.7				0.1				11.8				16.4			
Approach LOS	A				A				B				C			

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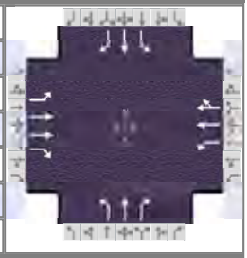
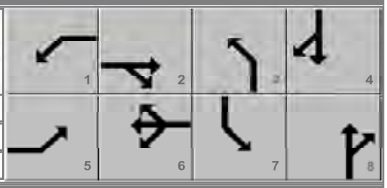
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	MJV	Analysis Date	Dec 28, 2022	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.90
Urban Street	SD 38	Analysis Year	2022	Analysis Period	1> 7:15
Intersection	SD 38 & Marion Street	File Name	(18) SD38&Marion_AM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	90	180	60	30	60	40	60	125	65	25	80	22

Signal Information												
Cycle, s	50.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On	Green	1.9	1.9	17.3	1.6	1.4	9.9		
Force Mode	Fixed	Simult. Gap N/S	On	Yellow	4.0	0.0	4.0	4.0	0.0	4.0		
				Red	0.0	0.0	0.0	0.0	0.0	0.0		



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	1.1	4.0	2.0	3.0	2.0	3.0
Phase Duration, s	7.8	23.2	5.9	21.3	7.0	15.3	5.6	13.9
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	2.9	0.0	2.9	0.0	2.9	2.9	2.9	2.9
Queue Clearance Time (g_s), s	4.9		2.6		4.0	5.5	2.9	4.1
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4
Phase Call Probability	0.75		0.37		0.60	1.00	0.32	0.99
Max Out Probability	0.17		0.00		1.00	0.01	1.00	0.01

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	100	200	67	33	56	55	67	139	72	28	89	24
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1701	1674	1525	1714	1772	1546	1647	1674	1502	1554	1758	1466
Queue Service Time (g_s), s	2.9	2.0	1.4	0.6	1.1	1.2	2.0	3.5	2.0	0.9	2.1	0.7
Cycle Queue Clearance Time (g_c), s	2.9	2.0	1.4	0.6	1.1	1.2	2.0	3.5	2.0	0.9	2.1	0.7
Green Ratio (*g/C*)	0.08	0.38	0.38	0.38	0.35	0.35	0.06	0.23	0.23	0.03	0.20	0.20
Capacity (*c*), veh/h	128	1285	586	574	613	535	99	380	341	50	349	291
Volume-to-Capacity Ratio (*X*)	0.783	0.156	0.114	0.058	0.092	0.102	0.670	0.366	0.212	0.558	0.255	0.084
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	1.9	0.9	0.7	0.3	0.6	0.6	1.3	1.9	0.9	0.6	1.2	0.3
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	22.7	10.1	9.9	9.7	11.0	11.1	23.0	16.3	15.7	23.9	16.9	16.3
Incremental Delay (d_2), s/veh	3.9	0.3	0.4	0.0	0.3	0.4	2.9	0.2	0.1	3.6	0.1	0.0
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	26.7	10.3	10.3	9.8	11.3	11.5	25.9	16.5	15.8	27.5	17.1	16.4
Level of Service (LOS)	C	B	B	A	B	B	C	B	B	C	B	B
Approach Delay, s/veh / LOS	14.8	B		11.0	B		18.6	B		19.0	B	
Intersection Delay, s/veh / LOS	16.0						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.08	B	2.08	B	2.27	B	2.42	B
Bicycle LOS Score / LOS	0.79	A	0.61	A	0.95	A	0.72	A

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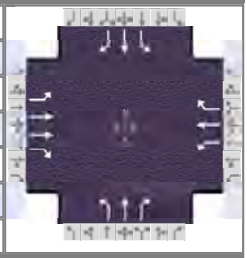
HCS Signalized Intersection Results Summary

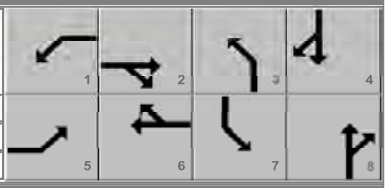
General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	MJV	Analysis Date	Dec 28, 2022	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.90
Urban Street	SD 38	Analysis Year	2022	Analysis Period	1> 16:45
Intersection	SD 38 & Marion Street	File Name	(18) SD38&Marion_PM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	40	120	60	95	190	30	100	115	70	45	195	115

Signal Information			
Cycle, s	50.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	2.3	1.6	16.0	2.5	1.6	10.0
Yellow	4.0	0.0	4.0	4.0	0.0	4.0
Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	6.3	20.0	7.9	21.6	8.1	15.6	6.5	14.0
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	2.9	0.0	2.9	0.0	2.9	3.0	2.9	3.0
Queue Clearance Time (g_s), s	3.5		5.1		5.2	5.0	3.5	7.6
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.5
Phase Call Probability	0.46		0.77		0.79	1.00	0.50	1.00
Max Out Probability	0.06		1.00		1.00	0.02	1.00	0.32

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	44	133	67	106	211	33	111	128	78	50	217	128
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1474	1660	1490	1688	1772	1406	1714	1772	1478	1688	1772	1478
Queue Service Time (g_s), s	1.5	1.4	1.6	3.1	4.4	0.8	3.2	3.0	2.1	1.5	5.6	3.8
Cycle Queue Clearance Time (g_c), s	1.5	1.4	1.6	3.1	4.4	0.8	3.2	3.0	2.1	1.5	5.6	3.8
Green Ratio (*g/C*)	0.05	0.32	0.32	0.08	0.35	0.35	0.08	0.23	0.23	0.05	0.20	0.20
Capacity (*c*), veh/h	68	1062	477	133	624	496	140	410	342	84	354	295
Volume-to-Capacity Ratio (*X*)	0.655	0.126	0.140	0.796	0.338	0.067	0.795	0.312	0.227	0.592	0.612	0.432
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	0.9	0.7	0.8	2.0	2.6	0.4	2.6	1.7	1.0	1.0	3.3	1.8
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	23.5	12.0	12.1	22.6	11.9	10.7	22.5	15.9	15.6	23.2	18.2	17.5
Incremental Delay (d_2), s/veh	3.9	0.2	0.6	4.1	1.5	0.3	10.9	0.2	0.1	2.4	0.6	0.4
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	27.4	12.3	12.7	26.7	13.4	11.0	33.4	16.1	15.7	25.7	18.9	17.9
Level of Service (LOS)	C	B	B	C	B	B	C	B	B	C	B	B
Approach Delay, s/veh / LOS	15.2	B		17.2	B		22.1	C		19.4	B	
Intersection Delay, s/veh / LOS	18.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.09	B	2.08	B	2.27	B	2.27	B
Bicycle LOS Score / LOS	0.69	A	1.07	A	1.01	A	1.14	A

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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	12/27/2022
Agency	HRG	Analysis Year	2022
Jurisdiction	SDDOT	Time Analyzed	AM PEAK
Project Description	EB SD38 Corridor Study	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1084
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	361	Opposing Demand Flow Rate, veh/h	217
Peak Hour Factor	0.90	Total Trucks, %	2.16
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.21

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.32483	Speed Power Coefficient (p)	0.53470
PF Slope Coefficient (m)	-1.32929	PF Power Coefficient (p)	0.76724
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1084	-	-	52.9

Vehicle Results

Average Speed, mi/h	52.9	Percent Followers, %	45.6
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	3.1
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	361	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.69	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	507
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	361	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	2.16
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.21

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.43973	PF Power Coefficient (p)	0.72475
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	507	-	-	52.4

Vehicle Results

Average Speed, mi/h	52.4	Percent Followers, %	49.7
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	3.4
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	361	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.69	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	535
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	361	Opposing Demand Flow Rate, veh/h	217
Peak Hour Factor	0.90	Total Trucks, %	2.16
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.21

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.32483	Speed Power Coefficient (p)	0.53470
PF Slope Coefficient (m)	-1.32929	PF Power Coefficient (p)	0.76724
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	535	-	-	52.9

Vehicle Results

Average Speed, mi/h	52.9	Percent Followers, %	45.6
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	3.1
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	361	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.69	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 4

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1494
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	411	Opposing Demand Flow Rate, veh/h	217
Peak Hour Factor	0.90	Total Trucks, %	1.63
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32812	Speed Power Coefficient (p)	0.53470
PF Slope Coefficient (m)	-1.23337	PF Power Coefficient (p)	0.80913
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1494	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	45.2
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	2.7
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	411	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.76	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 5

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5762
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	411	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	1.63
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.62977	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.20069	PF Power Coefficient (p)	0.78591
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5762	-	-	67.2

Vehicle Results

Average Speed, mi/h	67.2	Percent Followers, %	45.0
Segment Travel Time, minutes	0.98	Follower Density (FD), followers/mi/ln	2.8
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	411	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.76	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	383
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	411	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	1.89
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29361	PF Power Coefficient (p)	0.75772
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	383	-	-	67.2

Vehicle Results

Average Speed, mi/h	67.2	Percent Followers, %	48.3
Segment Travel Time, minutes	0.06	Follower Density (FD), followers/mi/ln	3.0
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	411	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.82	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1485
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	417	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	3.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.25

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57684	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28453	PF Power Coefficient (p)	0.76145
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1485	-	-	67.2

Vehicle Results

Average Speed, mi/h	67.2	Percent Followers, %	48.3
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	3.0
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	417	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.18	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 8

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	426
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	189	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	6.47
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29307	PF Power Coefficient (p)	0.75839
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	426	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	30.6
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	189	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.81	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1212
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	211	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29321	PF Power Coefficient (p)	0.75821
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1212	-	-	68.2

Vehicle Results

Average Speed, mi/h	68.2	Percent Followers, %	32.8
Segment Travel Time, minutes	0.20	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	211	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.46	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1877
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	211	Opposing Demand Flow Rate, veh/h	150
Peak Hour Factor	0.90	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30911	Speed Power Coefficient (p)	0.55474
PF Slope Coefficient (m)	-1.20061	PF Power Coefficient (p)	0.82238
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1877	-	-	68.7

Vehicle Results

Average Speed, mi/h	68.7	Percent Followers, %	28.4
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	0.9
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	211	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.46	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1872
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	211	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58354	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26676	PF Power Coefficient (p)	0.76864
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1872	-	-	68.2

Vehicle Results

Average Speed, mi/h	68.2	Percent Followers, %	31.8
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	211	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.46	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 12

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	3603
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	211	Opposing Demand Flow Rate, veh/h	150
Peak Hour Factor	0.90	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33276	Speed Power Coefficient (p)	0.55474
PF Slope Coefficient (m)	-1.15781	PF Power Coefficient (p)	0.83977
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3603	-	-	68.7

Vehicle Results			
Average Speed, mi/h	68.7	Percent Followers, %	26.9
Segment Travel Time, minutes	0.60	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	211	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.46	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 13

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1053
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	211	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29321	PF Power Coefficient (p)	0.75821

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1053	-	-	68.2

Vehicle Results

Average Speed, mi/h	68.2	Percent Followers, %	32.8
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	211	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.46	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 14

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1120
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	211	Opposing Demand Flow Rate, veh/h	150
Peak Hour Factor	0.90	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.29921	Speed Power Coefficient (p)	0.55474
PF Slope Coefficient (m)	-1.22576	PF Power Coefficient (p)	0.81100
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1120	-	-	68.7

Vehicle Results

Average Speed, mi/h	68.7	Percent Followers, %	29.3
Segment Travel Time, minutes	0.19	Follower Density (FD), followers/mi/ln	0.9
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	211	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.46	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 15

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1272
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	239	Opposing Demand Flow Rate, veh/h	161
Peak Hour Factor	0.90	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30382	Speed Power Coefficient (p)	0.55102
PF Slope Coefficient (m)	-1.22883	PF Power Coefficient (p)	0.81000
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1272	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	32.0
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	239	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.47	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 16

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	625
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	239	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29323	PF Power Coefficient (p)	0.75819
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	625	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	35.4
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	239	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.47	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 17

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1995
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	239	Opposing Demand Flow Rate, veh/h	161
Peak Hour Factor	0.90	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.31563	Speed Power Coefficient (p)	0.55102
PF Slope Coefficient (m)	-1.19928	PF Power Coefficient (p)	0.82326
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1995	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	30.9

Segment Travel Time, minutes	0.33	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	239	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.47	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 18

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1399
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	239	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57524	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28884	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1399	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	35.2
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	239	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.47	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 19

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1254
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	444	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	1.51
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.26

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29366	PF Power Coefficient (p)	0.75766
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1254	-	-	67.1

Vehicle Results

Average Speed, mi/h	67.1	Percent Followers, %	50.3
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	3.3
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	444	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.77	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 20

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1108
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	444	Opposing Demand Flow Rate, veh/h	150
Peak Hour Factor	0.90	Total Trucks, %	1.51
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.26

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.29921	Speed Power Coefficient (p)	0.55474
PF Slope Coefficient (m)	-1.22617	PF Power Coefficient (p)	0.81043
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1108	-	-	67.6

Vehicle Results

Average Speed, mi/h	67.6	Percent Followers, %	47.0
Segment Travel Time, minutes	0.19	Follower Density (FD), followers/mi/ln	3.1
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	444	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.77	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 21

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2901
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	444	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	1.51
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.26

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.59854	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.23554	PF Power Coefficient (p)	0.77974
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2901	-	-	67.1

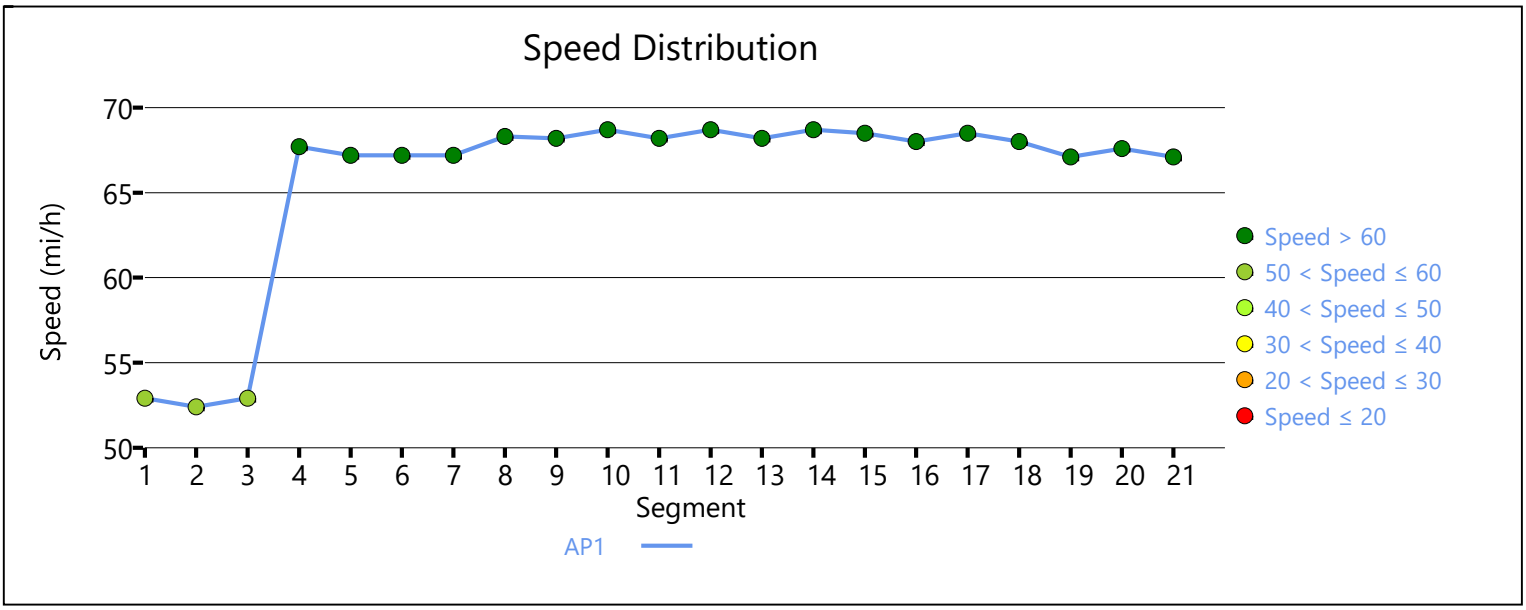
Vehicle Results

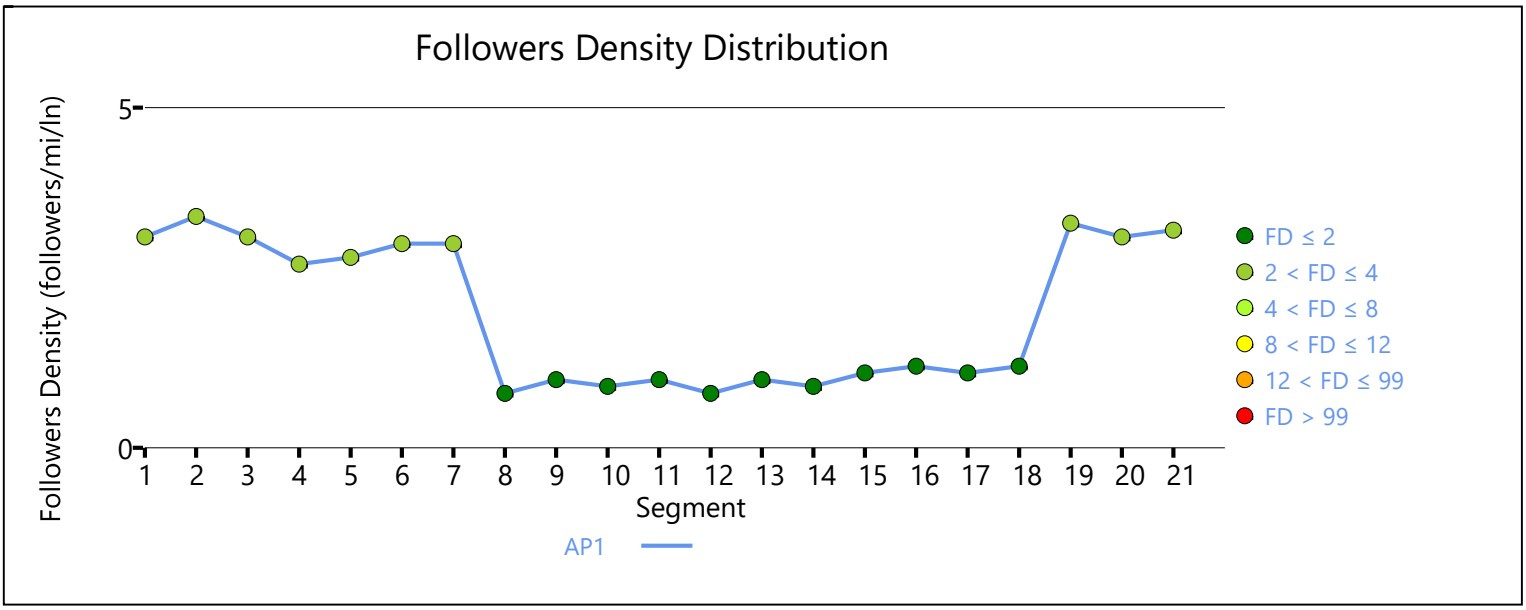
Average Speed, mi/h	67.1	Percent Followers, %	48.1
Segment Travel Time, minutes	0.49	Follower Density (FD), followers/mi/ln	3.2
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	444	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.77	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Facility Results				
T	**VMT veh-mi/p**	**VHD veh-h/p**	**Follower Density, followers/ mi/ln**	**LOS**
1	446	0.23	2.0	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	12/27/2022
Agency	HRG	Analysis Year	2022
Jurisdiction	SDDOT	Time Analyzed	PM PEAK
Project Description	EB SD38 Corridor Study	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1084
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	228	Opposing Demand Flow Rate, veh/h	417
Peak Hour Factor	0.90	Total Trucks, %	5.39
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.38384	Speed Power Coefficient (p)	0.49415
PF Slope Coefficient (m)	-1.36983	PF Power Coefficient (p)	0.75777
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1084	-	-	53.4

Vehicle Results

Average Speed, mi/h	53.4	Percent Followers, %	36.0
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	228	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.32	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	507
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	228	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	5.39
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.43930	PF Power Coefficient (p)	0.72520
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	507	-	-	53.1

Vehicle Results			
Average Speed, mi/h	53.1	Percent Followers, %	38.9
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	228	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.32	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 3

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	535
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	228	Opposing Demand Flow Rate, veh/h	417
Peak Hour Factor	0.90	Total Trucks, %	5.39
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.38384	Speed Power Coefficient (p)	0.49415
PF Slope Coefficient (m)	-1.36983	PF Power Coefficient (p)	0.75777
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	535	-	-	53.4

Vehicle Results

Average Speed, mi/h	53.4	Percent Followers, %	36.0
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	228	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.32	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 4

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1494
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	222	Opposing Demand Flow Rate, veh/h	500
Peak Hour Factor	0.90	Total Trucks, %	8.42
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.40733	Speed Power Coefficient (p)	0.48207
PF Slope Coefficient (m)	-1.27021	PF Power Coefficient (p)	0.79452
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1494	-	-	68.4

Vehicle Results

Average Speed, mi/h	68.4	Percent Followers, %	31.9
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	222	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.62	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Segment 5

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5762
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	222	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	8.42
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.62977	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.19994	PF Power Coefficient (p)	0.78694
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5762	-	-	68.1

Vehicle Results

Average Speed, mi/h	68.1	Percent Followers, %	30.7
Segment Travel Time, minutes	0.96	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	222	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.62	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	383
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	228	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	8.78
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29280	PF Power Coefficient (p)	0.75872
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	383	-	-	68.1

Vehicle Results

Average Speed, mi/h	68.1	Percent Followers, %	34.3
Segment Travel Time, minutes	0.06	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	228	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.78	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1485
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	250	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	8.52
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57684	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28391	PF Power Coefficient (p)	0.76223
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1485	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	36.0
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	250	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Segment 8

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	426
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	178	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	10.56
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29259	PF Power Coefficient (p)	0.75898
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	426	-	-	68.4

Vehicle Results

Average Speed, mi/h	68.4	Percent Followers, %	29.4
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	178	Bicycle Effective Width, ft	28
Bicycle LOS Score	4.36	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1212
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	183	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	7.27
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29298	PF Power Coefficient (p)	0.75850
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1212	-	-	68.4

Vehicle Results

Average Speed, mi/h	68.4	Percent Followers, %	30.0
Segment Travel Time, minutes	0.20	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	183	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.08	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1877
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	183	Opposing Demand Flow Rate, veh/h	250
Peak Hour Factor	0.90	Total Trucks, %	7.27
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34605	Speed Power Coefficient (p)	0.52632
PF Slope Coefficient (m)	-1.22260	PF Power Coefficient (p)	0.81482
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1877	-	-	68.8

Vehicle Results

Average Speed, mi/h	68.8	Percent Followers, %	26.4
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	183	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.08	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1872
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	183	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	7.27
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58354	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26653	PF Power Coefficient (p)	0.76894
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1872	-	-	68.4

Vehicle Results

Average Speed, mi/h	68.4	Percent Followers, %	29.1
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	183	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.08	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 12

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	3603
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	183	Opposing Demand Flow Rate, veh/h	250
Peak Hour Factor	0.90	Total Trucks, %	7.27
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36970	Speed Power Coefficient (p)	0.52632
PF Slope Coefficient (m)	-1.17891	PF Power Coefficient (p)	0.83167
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3603	-	-	68.8

Vehicle Results			
Average Speed, mi/h	68.8	Percent Followers, %	25.0
Segment Travel Time, minutes	0.59	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	183	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.08	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 13

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1053
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	183	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	7.27
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29298	PF Power Coefficient (p)	0.75850

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1053	-	-	68.4

Vehicle Results

Average Speed, mi/h	68.4	Percent Followers, %	30.0
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	183	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.08	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 14

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1120
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	183	Opposing Demand Flow Rate, veh/h	250
Peak Hour Factor	0.90	Total Trucks, %	7.27
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33615	Speed Power Coefficient (p)	0.52632
PF Slope Coefficient (m)	-1.24829	PF Power Coefficient (p)	0.80375
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1120	-	-	68.8

Vehicle Results

Average Speed, mi/h	68.8	Percent Followers, %	27.3
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	183	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.08	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 15

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1272
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	217	Opposing Demand Flow Rate, veh/h	283
Peak Hour Factor	0.90	Total Trucks, %	6.63
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34673	Speed Power Coefficient (p)	0.51874
PF Slope Coefficient (m)	-1.25416	PF Power Coefficient (p)	0.80155
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1272	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	30.8
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	217	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.94	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 16

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	625
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	217	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	6.63
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29305	PF Power Coefficient (p)	0.75841
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	625	-	-	68.1

Vehicle Results

Average Speed, mi/h	68.1	Percent Followers, %	33.3
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	217	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.94	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 17

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1995
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	217	Opposing Demand Flow Rate, veh/h	283
Peak Hour Factor	0.90	Total Trucks, %	6.63
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35854	Speed Power Coefficient (p)	0.51874
PF Slope Coefficient (m)	-1.22390	PF Power Coefficient (p)	0.81440
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1995	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	29.7

Segment Travel Time, minutes	0.33	Follower Density (FD), followers/mi/ln	0.9
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	217	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.94	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 18

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1399
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	217	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	6.63
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57524	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28865	PF Power Coefficient (p)	0.76016
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1399	-	-	68.1

Vehicle Results

Average Speed, mi/h	68.1	Percent Followers, %	33.2
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	217	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.94	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 19

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1254
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	217	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	8.67
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29281	PF Power Coefficient (p)	0.75871
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1254	-	-	68.1

Vehicle Results

Average Speed, mi/h	68.1	Percent Followers, %	33.3
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	217	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.71	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Segment 20

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1108
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	217	Opposing Demand Flow Rate, veh/h	461
Peak Hour Factor	0.90	Total Trucks, %	8.67
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39484	Speed Power Coefficient (p)	0.48746
PF Slope Coefficient (m)	-1.27606	PF Power Coefficient (p)	0.79254
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1108	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	31.6
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	217	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.71	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Segment 21

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2901
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	217	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	8.67
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.59854	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.23473	PF Power Coefficient (p)	0.78081
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2901	-	-	68.1

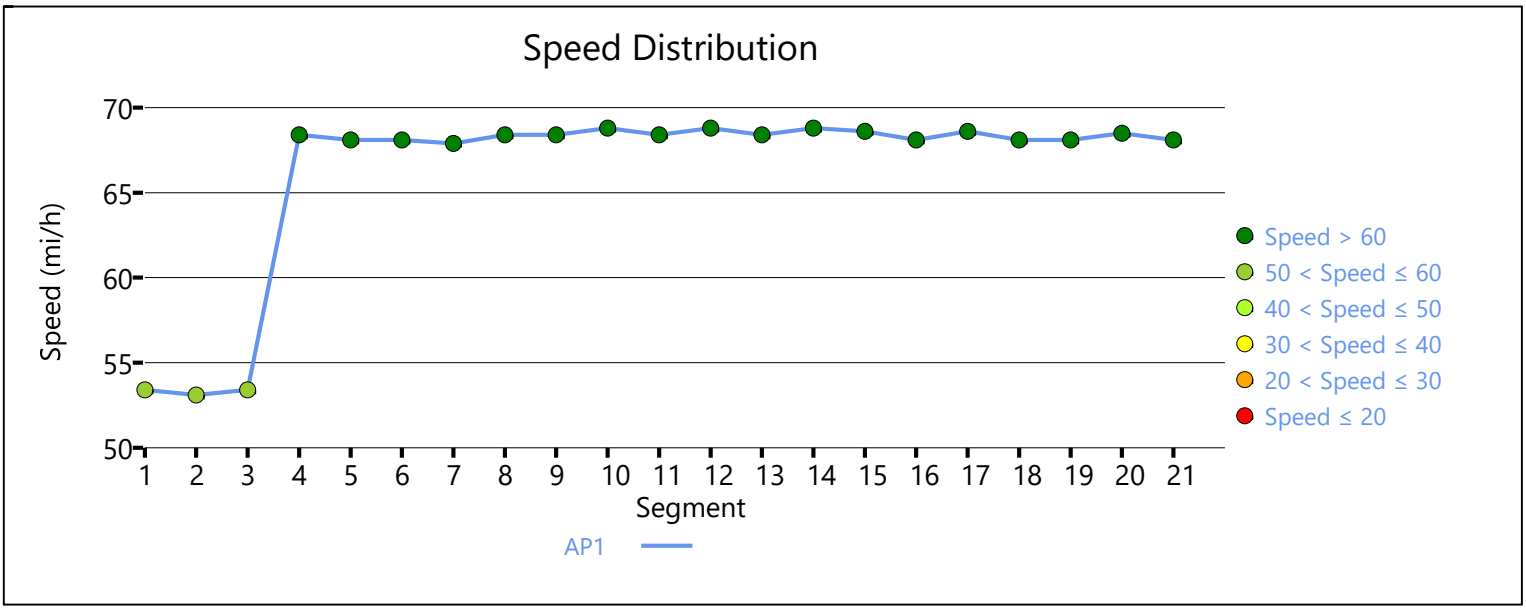
Vehicle Results

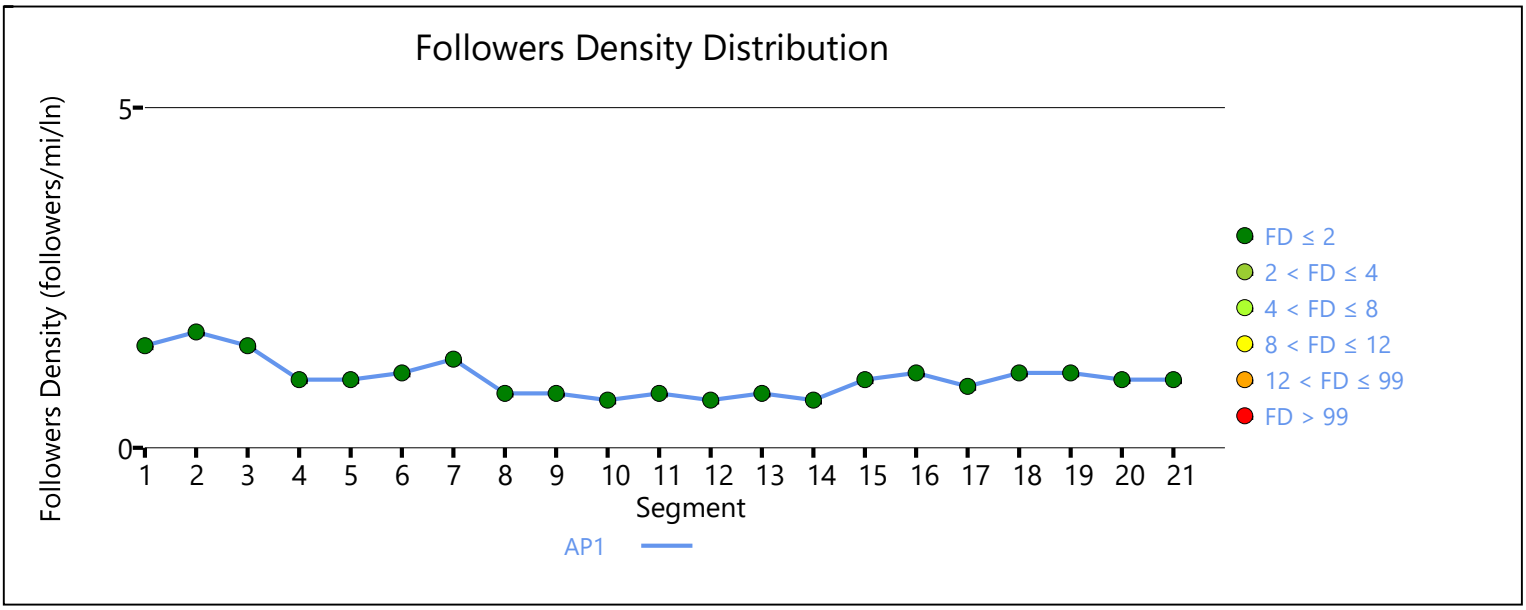
Average Speed, mi/h	68.1	Percent Followers, %	31.2
Segment Travel Time, minutes	0.48	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	217	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.71	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Facility Results				
T	**VMT veh-mi/p**	**VHD veh-h/p**	**Follower Density, followers/ mi/ln**	**LOS**
1	293	0.11	1.0	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	12/28/2022
Agency	HRG	Analysis Year	2022
Jurisdiction	SDDOT	Time Analyzed	AM Peak
Project Description	West of Hartford SD 38 EB	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1069
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	133	Opposing Demand Flow Rate, veh/h	89
Peak Hour Factor	0.90	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.26998	Speed Power Coefficient (p)	0.57939
PF Slope Coefficient (m)	-1.26431	PF Power Coefficient (p)	0.79173
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1069	-	-	59.4

Vehicle Results

Average Speed, mi/h	59.4	Percent Followers, %	22.6
Segment Travel Time, minutes	0.20	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	133	Bicycle Effective Width, ft	31
Bicycle LOS Score	1.33	Bicycle Effective Speed Factor	4.79
Bicycle LOS	A		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	664
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	133	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	664	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	24.5
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	133	Bicycle Effective Width, ft	31
Bicycle LOS Score	1.47	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1871
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	133	Opposing Demand Flow Rate, veh/h	89
Peak Hour Factor	0.90	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.27979	Speed Power Coefficient (p)	0.57939
PF Slope Coefficient (m)	-1.18064	PF Power Coefficient (p)	0.82894
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1871	-	-	69.4

Vehicle Results

Average Speed, mi/h	69.4	Percent Followers, %	19.9
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	133	Bicycle Effective Width, ft	31
Bicycle LOS Score	1.47	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	925
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	133	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	925	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	24.5
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	133	Bicycle Effective Width, ft	31
Bicycle LOS Score	1.47	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4476
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	133	Opposing Demand Flow Rate, veh/h	89
Peak Hour Factor	0.90	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.31327	Speed Power Coefficient (p)	0.57939
PF Slope Coefficient (m)	-1.12762	PF Power Coefficient (p)	0.84992
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4476	-	-	69.4

Vehicle Results

Average Speed, mi/h	69.4	Percent Followers, %	18.4
Segment Travel Time, minutes	0.73	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	133	Bicycle Effective Width, ft	31
Bicycle LOS Score	1.47	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	896
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	133	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	896	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	24.5
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	133	Bicycle Effective Width, ft	31
Bicycle LOS Score	1.47	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	743
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	133	Opposing Demand Flow Rate, veh/h	89
Peak Hour Factor	0.90	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.26998	Speed Power Coefficient (p)	0.57939
PF Slope Coefficient (m)	-1.20509	PF Power Coefficient (p)	0.81737
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	743	-	-	69.4

Vehicle Results

Average Speed, mi/h	69.4	Percent Followers, %	20.7
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	133	Bicycle Effective Width, ft	31
Bicycle LOS Score	1.47	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2717
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	133	Opposing Demand Flow Rate, veh/h	89
Peak Hour Factor	0.90	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.29235	Speed Power Coefficient (p)	0.57939
PF Slope Coefficient (m)	-1.15570	PF Power Coefficient (p)	0.83991
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2717	-	-	69.4

Vehicle Results

Average Speed, mi/h	69.4	Percent Followers, %	19.2
Segment Travel Time, minutes	0.44	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	133	Bicycle Effective Width, ft	31
Bicycle LOS Score	0.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1013
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	133	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29345	PF Power Coefficient (p)	0.75792
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1013	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	24.5
Segment Travel Time, minutes	0.17	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	133	Bicycle Effective Width, ft	31
Bicycle LOS Score	0.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4569
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	133	Opposing Demand Flow Rate, veh/h	89
Peak Hour Factor	0.90	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.31425	Speed Power Coefficient (p)	0.57939
PF Slope Coefficient (m)	-1.12699	PF Power Coefficient (p)	0.84968
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	4569	-	-	69.4

Vehicle Results

Average Speed, mi/h	69.4	Percent Followers, %	18.4
Segment Travel Time, minutes	0.75	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	133	Bicycle Effective Width, ft	31
Bicycle LOS Score	0.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5676
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	133	Opposing Demand Flow Rate, veh/h	89
Peak Hour Factor	0.90	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32522	Speed Power Coefficient (p)	0.57939
PF Slope Coefficient (m)	-1.11957	PF Power Coefficient (p)	0.84944
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5676	-	-	69.4

Vehicle Results

Average Speed, mi/h	69.4	Percent Followers, %	18.3
Segment Travel Time, minutes	0.93	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	133	Bicycle Effective Width, ft	31
Bicycle LOS Score	0.57	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 12

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	657
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	156	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29350	PF Power Coefficient (p)	0.75785
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	657	-	-	68.6

Vehicle Results			
Average Speed, mi/h	68.6	Percent Followers, %	27.1
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	156	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.25	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 13

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	6009
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	156	Opposing Demand Flow Rate, veh/h	100
Peak Hour Factor	0.90	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33423	Speed Power Coefficient (p)	0.57423
PF Slope Coefficient (m)	-1.12228	PF Power Coefficient (p)	0.84725

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6009	-	-	69.2

Vehicle Results

Average Speed, mi/h	69.2	Percent Followers, %	20.7
Segment Travel Time, minutes	0.99	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	156	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.25	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	891
Measured FFS	Measured	Free-Flow Speed, mi/h	50.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	156	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	50.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.47375	PF Power Coefficient (p)	0.71164
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	891	-	-	48.6

Vehicle Results

Average Speed, mi/h	48.6	Percent Followers, %	32.4
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

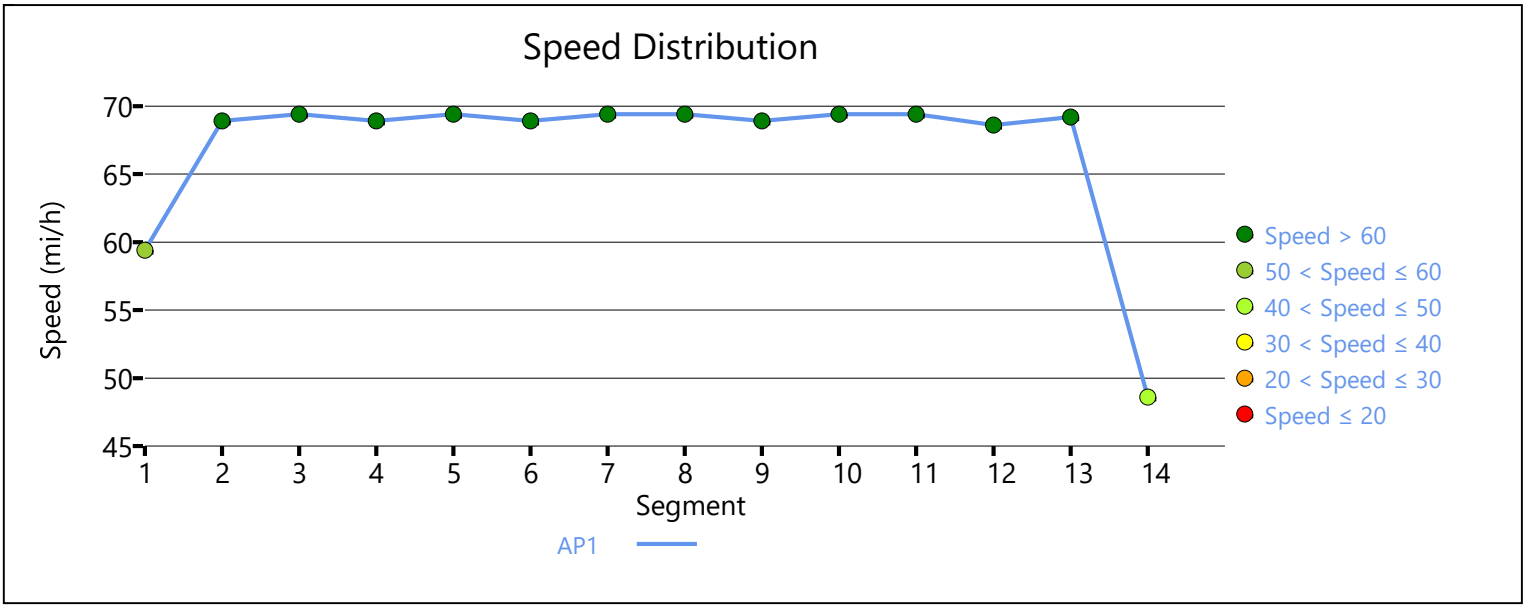
Bicycle Results

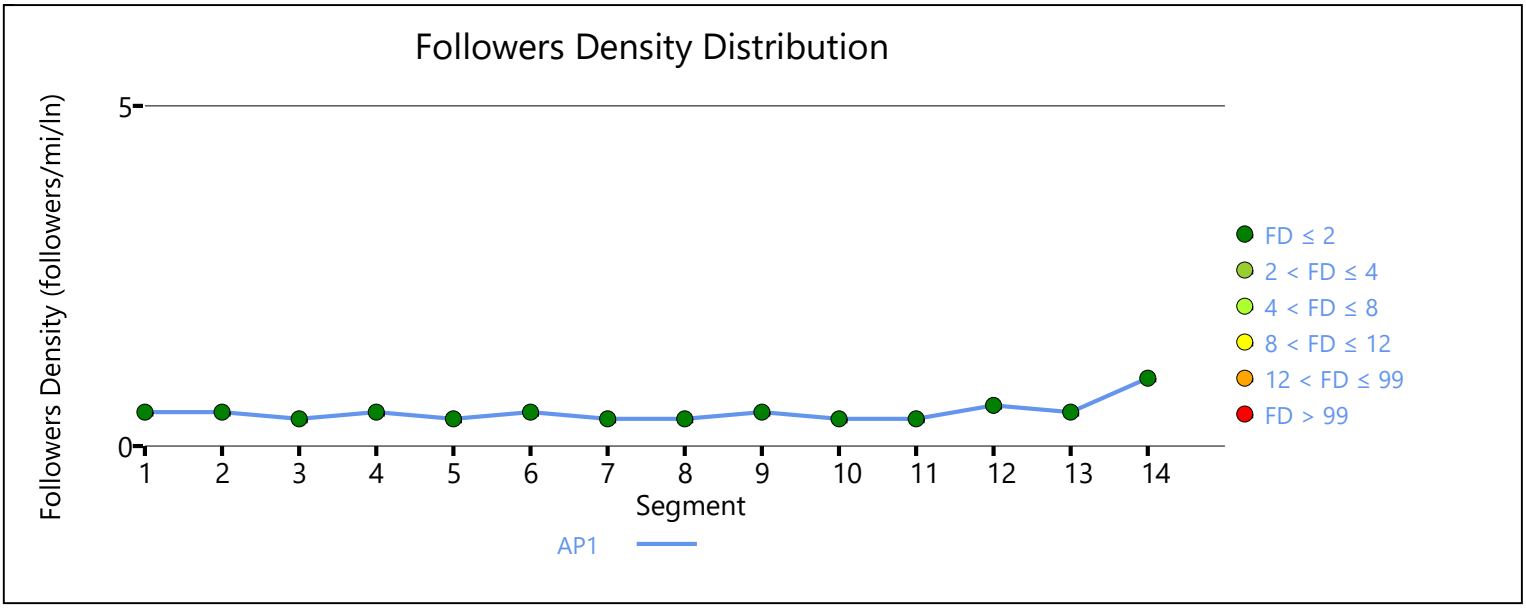
Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	156	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.03	Bicycle Effective Speed Factor	4.42
Bicycle LOS	A		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	190	0.03	0.4	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	3/13/2023
Agency	HRG	Analysis Year	2022
Jurisdiction	SDDOT	Time Analyzed	PM Peak
Project Description	West of Hartford SD 38 EB	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1069
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	83	Opposing Demand Flow Rate, veh/h	156
Peak Hour Factor	0.90	Total Trucks, %	10.67
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.05

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.30154	Speed Power Coefficient (p)	0.55285
PF Slope Coefficient (m)	-1.28890	PF Power Coefficient (p)	0.78639
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1069	-	-	60.0

Vehicle Results

Average Speed, mi/h	60.0	Percent Followers, %	16.7
Segment Travel Time, minutes	0.20	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	83	Bicycle Effective Width, ft	35
Bicycle LOS Score	1.57	Bicycle Effective Speed Factor	4.79
Bicycle LOS	B		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	664
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	83	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	10.67
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.05

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29258	PF Power Coefficient (p)	0.75900
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	664	-	-	70.0

Vehicle Results			
Average Speed, mi/h	70.0	Percent Followers, %	17.8
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	83	Bicycle Effective Width, ft	35
Bicycle LOS Score	1.82	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 3

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	1871
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	83	Opposing Demand Flow Rate, veh/h	156
Peak Hour Factor	0.90	Total Trucks, %	10.67
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.05

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.31134	Speed Power Coefficient (p)	0.55285
PF Slope Coefficient (m)	-1.20176	PF Power Coefficient (p)	0.82259
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1871	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	14.4
Segment Travel Time, minutes	0.30	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	83	Bicycle Effective Width, ft	35
Bicycle LOS Score	1.82	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	925
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	83	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	10.67
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.05

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29258	PF Power Coefficient (p)	0.75900
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	925	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	17.8
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	83	Bicycle Effective Width, ft	35
Bicycle LOS Score	1.82	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4476
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	83	Opposing Demand Flow Rate, veh/h	156
Peak Hour Factor	0.90	Total Trucks, %	10.67
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.05

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34483	Speed Power Coefficient (p)	0.55285
PF Slope Coefficient (m)	-1.14766	PF Power Coefficient (p)	0.84290
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4476	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	13.2
Segment Travel Time, minutes	0.73	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	83	Bicycle Effective Width, ft	35
Bicycle LOS Score	1.82	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	896
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	83	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	10.67
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.05

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29258	PF Power Coefficient (p)	0.75900
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	896	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	17.8
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	83	Bicycle Effective Width, ft	35
Bicycle LOS Score	1.82	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	743
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	83	Opposing Demand Flow Rate, veh/h	156
Peak Hour Factor	0.90	Total Trucks, %	10.67
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.05

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30154	Speed Power Coefficient (p)	0.55285
PF Slope Coefficient (m)	-1.22670	PF Power Coefficient (p)	0.81132
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	743	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	15.1
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	83	Bicycle Effective Width, ft	35
Bicycle LOS Score	1.82	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2717
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	89	Opposing Demand Flow Rate, veh/h	0
Peak Hour Factor	0.90	Total Trucks, %	12.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.05

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.19461	Speed Power Coefficient (p)	0.67576
PF Slope Coefficient (m)	-1.07493	PF Power Coefficient (p)	0.86823
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2717	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	12.3
Segment Travel Time, minutes	0.44	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	89	Bicycle Effective Width, ft	35
Bicycle LOS Score	2.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1013
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	89	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	12.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.05

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29236	PF Power Coefficient (p)	0.75927
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1013	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	18.6
Segment Travel Time, minutes	0.16	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	89	Bicycle Effective Width, ft	35
Bicycle LOS Score	2.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4569
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	89	Opposing Demand Flow Rate, veh/h	156
Peak Hour Factor	0.90	Total Trucks, %	12.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.05

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34581	Speed Power Coefficient (p)	0.55285
PF Slope Coefficient (m)	-1.14656	PF Power Coefficient (p)	0.84333
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	4569	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	13.8
Segment Travel Time, minutes	0.74	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	89	Bicycle Effective Width, ft	35
Bicycle LOS Score	2.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5676
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	111	Opposing Demand Flow Rate, veh/h	167
Peak Hour Factor	0.90	Total Trucks, %	11.34
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36131	Speed Power Coefficient (p)	0.54922
PF Slope Coefficient (m)	-1.14178	PF Power Coefficient (p)	0.84180
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5676	-	-	69.6

Vehicle Results

Average Speed, mi/h	69.6	Percent Followers, %	16.4
Segment Travel Time, minutes	0.93	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	111	Bicycle Effective Width, ft	33
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 12

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	657
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	111	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	11.34
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29250	PF Power Coefficient (p)	0.75910
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	657	-	-	69.3

Vehicle Results			
Average Speed, mi/h	69.3	Percent Followers, %	21.6
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	111	Bicycle Effective Width, ft	33
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 13

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	6009
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	111	Opposing Demand Flow Rate, veh/h	167
Peak Hour Factor	0.90	Total Trucks, %	11.34
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36440	Speed Power Coefficient (p)	0.54922
PF Slope Coefficient (m)	-1.14046	PF Power Coefficient (p)	0.84112

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6009	-	-	69.6

Vehicle Results

Average Speed, mi/h	69.6	Percent Followers, %	16.4
Segment Travel Time, minutes	0.98	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	111	Bicycle Effective Width, ft	33
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	891
Measured FFS	Measured	Free-Flow Speed, mi/h	50.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	111	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	11.34
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	50.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.47260	PF Power Coefficient (p)	0.71282
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	891	-	-	49.3

Vehicle Results

Average Speed, mi/h	49.3	Percent Followers, %	26.5
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

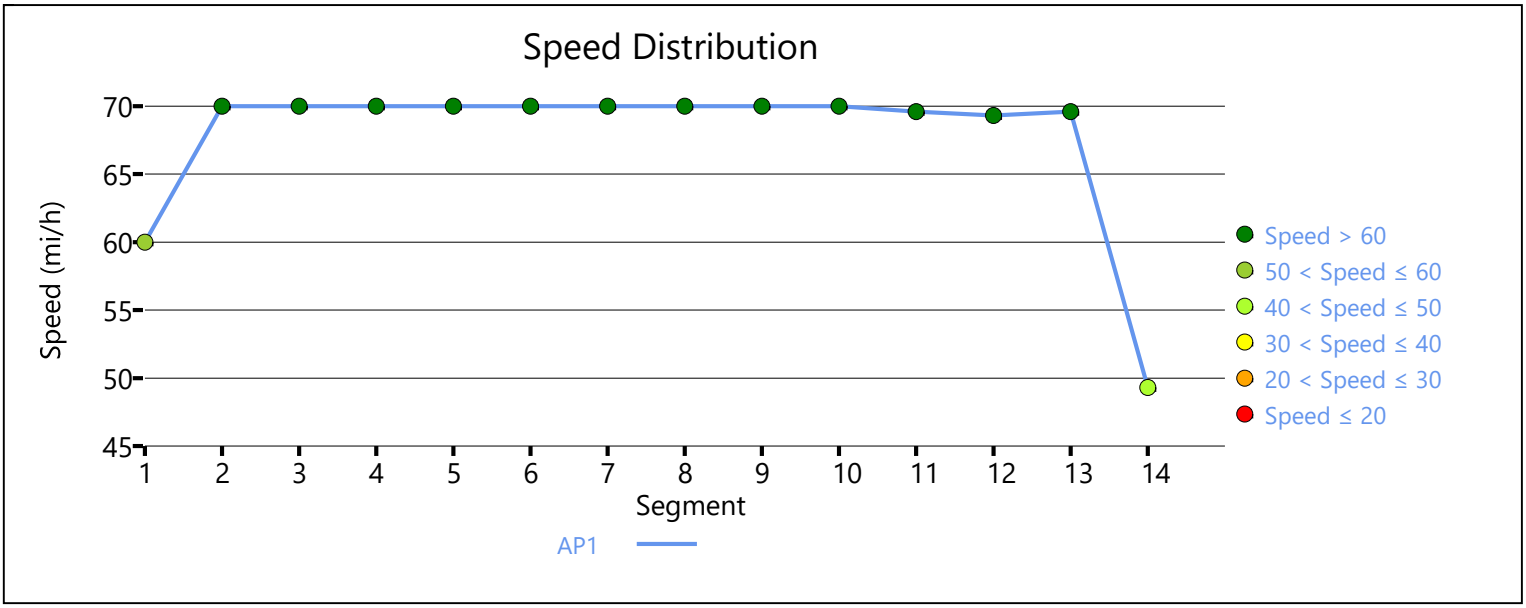
Bicycle Results

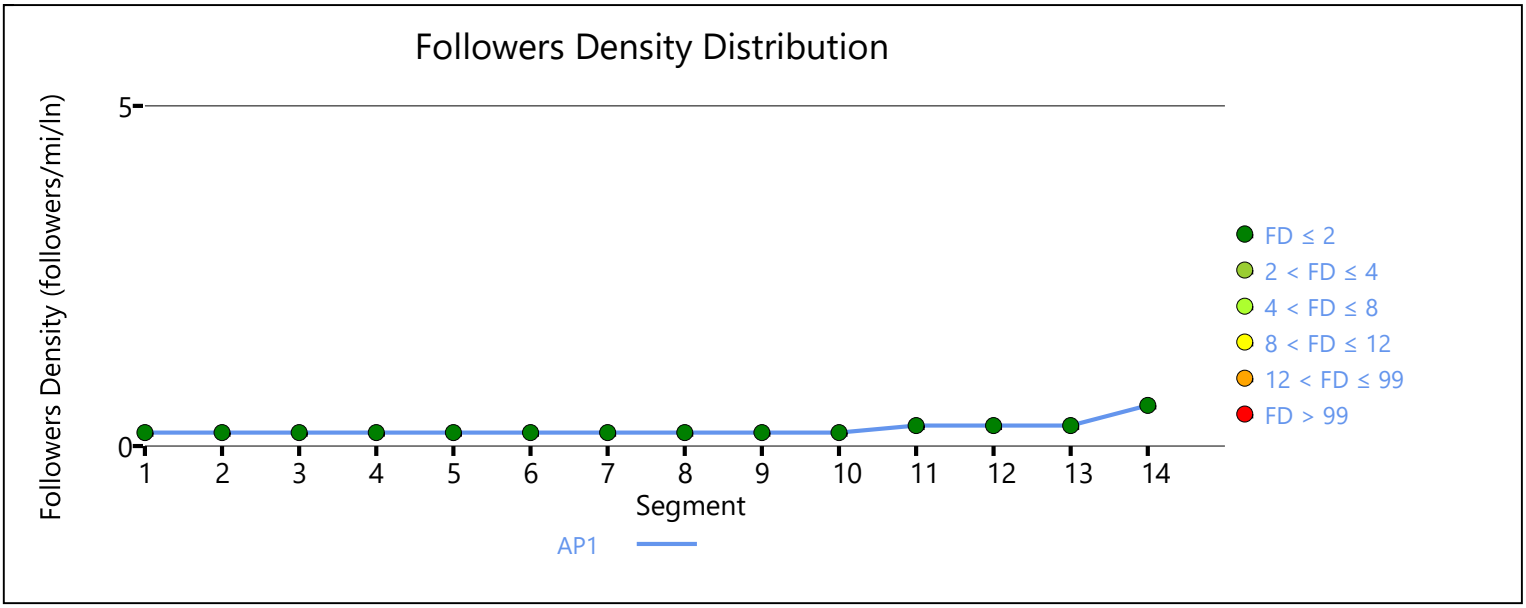
Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	111	Bicycle Effective Width, ft	33
Bicycle LOS Score	2.33	Bicycle Effective Speed Factor	4.42
Bicycle LOS	B		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	132	0.01	0.2	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	12/28/2022
Agency	HRG	Analysis Year	2022
Jurisdiction	SDDOT	Time Analyzed	AM Peak
Project Description	SD 38 WB East of Hartford	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1727
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	156	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	8.97
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58112	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.27241	PF Power Coefficient (p)	0.76681
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1727	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	26.3
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	156	Bicycle Effective Width, ft	29
Bicycle LOS Score	3.34	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1676
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	156	Opposing Demand Flow Rate, veh/h	444
Peak Hour Factor	0.90	Total Trucks, %	8.97
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39731	Speed Power Coefficient (p)	0.48990
PF Slope Coefficient (m)	-1.25657	PF Power Coefficient (p)	0.80067
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1676	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	24.7
Segment Travel Time, minutes	0.28	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	156	Bicycle Effective Width, ft	29
Bicycle LOS Score	3.34	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 3

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1864
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	156	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58341	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26572	PF Power Coefficient (p)	0.77025
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1864	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	26.1
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	156	Bicycle Effective Width, ft	29
Bicycle LOS Score	7.33	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	718
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	161	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29182	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	718	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.6
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	161	Bicycle Effective Width, ft	29
Bicycle LOS Score	7.34	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1738
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	161	Opposing Demand Flow Rate, veh/h	239
Peak Hour Factor	0.90	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34005	Speed Power Coefficient (p)	0.52901
PF Slope Coefficient (m)	-1.22506	PF Power Coefficient (p)	0.81466
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1738	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	24.2
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	161	Bicycle Effective Width, ft	29
Bicycle LOS Score	7.34	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	579
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	161	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29182	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	579	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.6
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	161	Bicycle Effective Width, ft	29
Bicycle LOS Score	7.34	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2262
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	150	Opposing Demand Flow Rate, veh/h	239
Peak Hour Factor	0.90	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34837	Speed Power Coefficient (p)	0.52901
PF Slope Coefficient (m)	-1.20599	PF Power Coefficient (p)	0.82289
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2262	-	-	69.1

Vehicle Results

Average Speed, mi/h	69.1	Percent Followers, %	22.4
Segment Travel Time, minutes	0.37	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	150	Bicycle Effective Width, ft	30
Bicycle LOS Score	7.85	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 8

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	980
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	150	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	980	-	-	68.7

Vehicle Results			
Average Speed, mi/h	68.7	Percent Followers, %	26.3
Segment Travel Time, minutes	0.16	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	150	Bicycle Effective Width, ft	30
Bicycle LOS Score	7.85	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 9

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	3667
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	150	Opposing Demand Flow Rate, veh/h	211
Peak Hour Factor	0.90	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35717	Speed Power Coefficient (p)	0.53618
PF Slope Coefficient (m)	-1.16948	PF Power Coefficient (p)	0.83666
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3667	-	-	69.1

Vehicle Results

Average Speed, mi/h	69.1	Percent Followers, %	21.3
Segment Travel Time, minutes	0.60	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	150	Bicycle Effective Width, ft	30
Bicycle LOS Score	7.85	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 10

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1846
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	150	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58311	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26629	PF Power Coefficient (p)	0.77017
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1846	-	-	68.7

Vehicle Results

Average Speed, mi/h	68.7	Percent Followers, %	25.5
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	150	Bicycle Effective Width, ft	30
Bicycle LOS Score	7.85	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2174
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	150	Opposing Demand Flow Rate, veh/h	211
Peak Hour Factor	0.90	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33744	Speed Power Coefficient (p)	0.53618
PF Slope Coefficient (m)	-1.20334	PF Power Coefficient (p)	0.82378
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2174	-	-	69.1

Vehicle Results

Average Speed, mi/h	69.1	Percent Followers, %	22.3
Segment Travel Time, minutes	0.36	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	150	Bicycle Effective Width, ft	30
Bicycle LOS Score	7.85	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 12

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1277
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	150	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1277	-	-	68.7

Vehicle Results

Average Speed, mi/h	68.7	Percent Followers, %	26.3
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	150	Bicycle Effective Width, ft	30
Bicycle LOS Score	7.85	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 13

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	779
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	150	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	779	-	-	68.7

Vehicle Results

Average Speed, mi/h	68.7	Percent Followers, %	26.3
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	150	Bicycle Effective Width, ft	30
Bicycle LOS Score	7.85	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	422
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	156	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	13.95
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29219	PF Power Coefficient (p)	0.75948
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	422	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.0
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	156	Bicycle Effective Width, ft	29
Bicycle LOS Score	5.63	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 15

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1478
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	144	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	19.53
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57671	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28298	PF Power Coefficient (p)	0.76370
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1478	-	-	68.7

Vehicle Results

Average Speed, mi/h	68.7	Percent Followers, %	25.4
Segment Travel Time, minutes	0.24	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	144	Bicycle Effective Width, ft	30
Bicycle LOS Score	8.51	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 16

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	384
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	222	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	12.76
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29233	PF Power Coefficient (p)	0.75931
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	384	-	-	68.1

Vehicle Results

Average Speed, mi/h	68.1	Percent Followers, %	33.8
Segment Travel Time, minutes	0.06	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	222	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.54	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 17

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3732
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	217	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.60878	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.21846	PF Power Coefficient (p)	0.78615
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3732	-	-	68.1

Vehicle Results

Average Speed, mi/h	68.1	Percent Followers, %	30.7

Segment Travel Time, minutes	0.62	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	217	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.26	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 18

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1360
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	217	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57450	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29014	PF Power Coefficient (p)	0.76012
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1360	-	-	68.1

Vehicle Results

Average Speed, mi/h	68.1	Percent Followers, %	33.2
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	217	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.26	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 19

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1595
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	217	Opposing Demand Flow Rate, veh/h	411
Peak Hour Factor	0.90	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.38753	Speed Power Coefficient (p)	0.49503
PF Slope Coefficient (m)	-1.25652	PF Power Coefficient (p)	0.80127
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1595	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	30.9
Segment Travel Time, minutes	0.26	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	217	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.26	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 20

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	595
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	217	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.43841	PF Power Coefficient (p)	0.72616
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	595	-	-	53.1

Vehicle Results

Average Speed, mi/h	53.1	Percent Followers, %	37.7
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	217	Bicycle Effective Width, ft	24
Bicycle LOS Score	5.80	Bicycle Effective Speed Factor	4.62
Bicycle LOS	F		

Segment 21

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	958
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	217	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	10.81
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.43859	PF Power Coefficient (p)	0.72596
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	958	-	-	53.1

Vehicle Results

Average Speed, mi/h	53.1	Percent Followers, %	37.7
Segment Travel Time, minutes	0.20	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	217	Bicycle Effective Width, ft	24
Bicycle LOS Score	5.21	Bicycle Effective Speed Factor	4.62
Bicycle LOS	E		

Segment 22

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1659
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	217	Opposing Demand Flow Rate, veh/h	361
Peak Hour Factor	0.90	Total Trucks, %	10.81
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.37546	Speed Power Coefficient (p)	0.50346
PF Slope Coefficient (m)	-1.34127	PF Power Coefficient (p)	0.76726
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1659	-	-	53.5

Vehicle Results

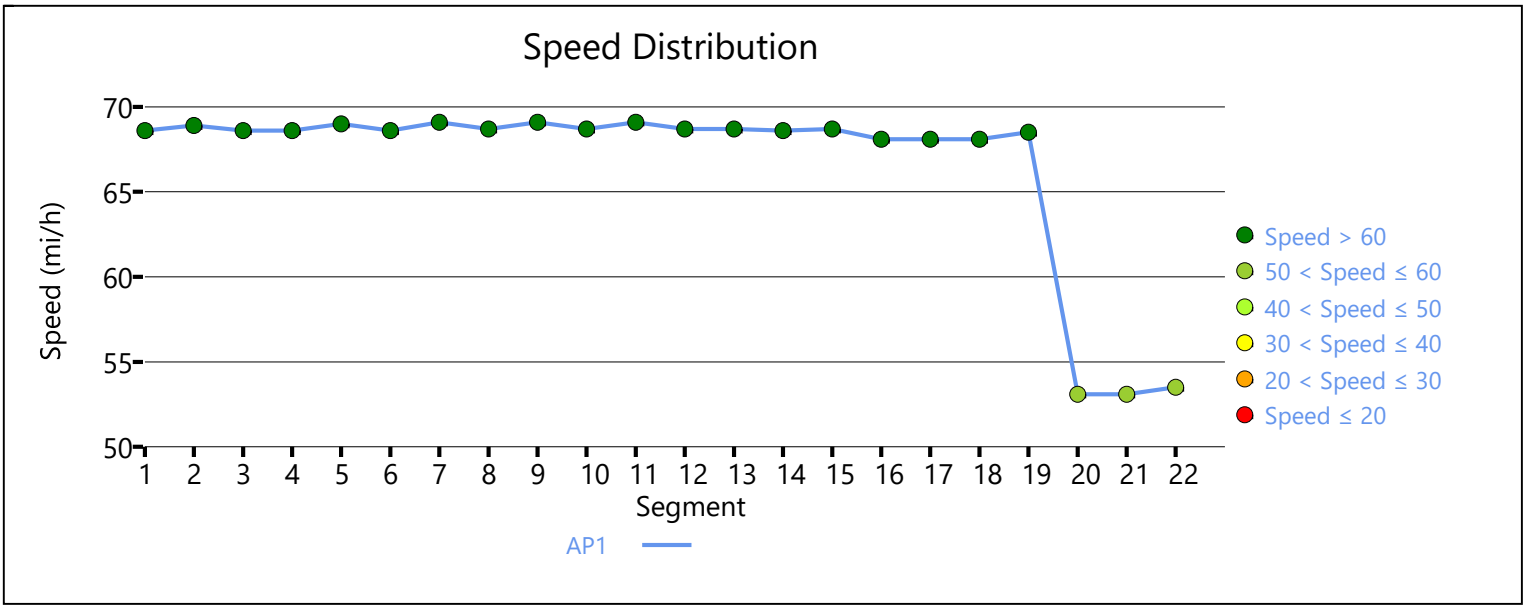
Average Speed, mi/h	53.5	Percent Followers, %	34.0
Segment Travel Time, minutes	0.35	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

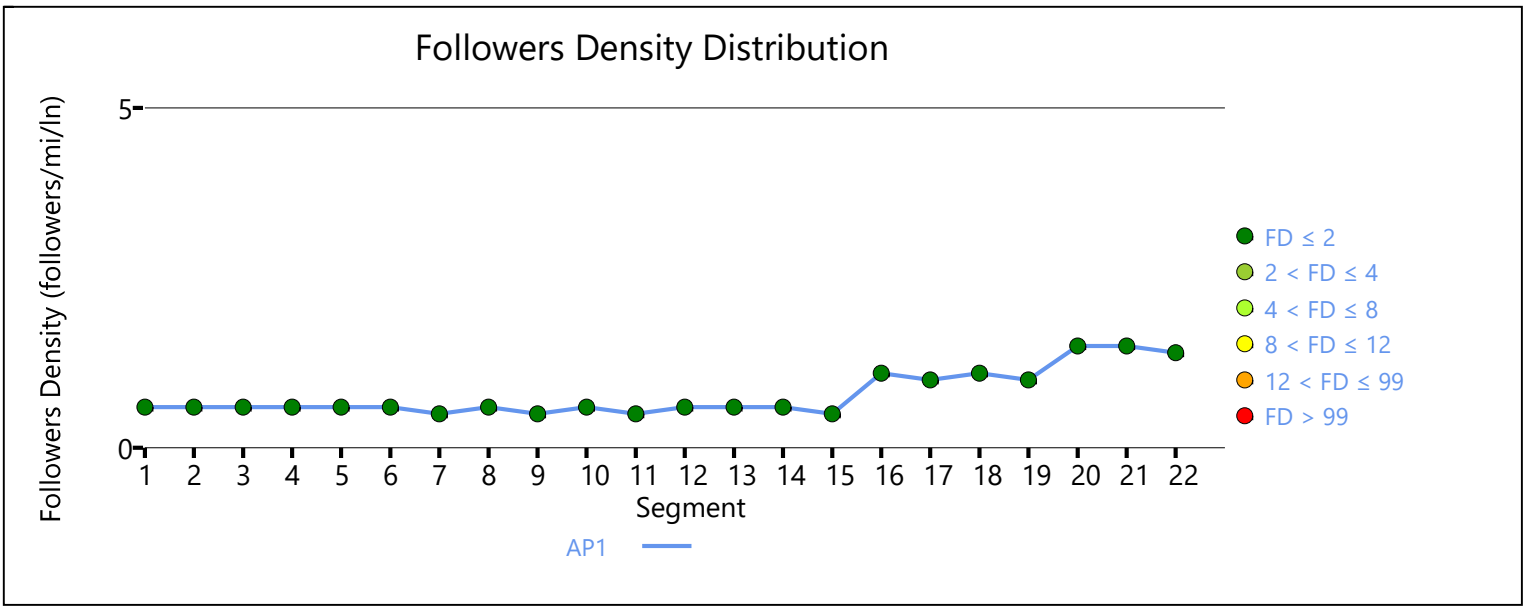
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	217	Bicycle Effective Width, ft	24
Bicycle LOS Score	5.21	Bicycle Effective Speed Factor	4.62
Bicycle LOS	E		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	246	0.08	0.7	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	12/28/2022
Agency	HRG	Analysis Year	2022
Jurisdiction	SDDOT	Time Analyzed	PM Peak
Project Description	SD 38 WB East of Hartford	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1727
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	461	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	2.48
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.27

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58112	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.27317	PF Power Coefficient (p)	0.76586
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1727	-	-	67.0

Vehicle Results

Average Speed, mi/h	67.0	Percent Followers, %	50.5
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	3.5
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	461	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.03	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1676
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	461	Opposing Demand Flow Rate, veh/h	217
Peak Hour Factor	0.90	Total Trucks, %	2.48
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.27

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33136	Speed Power Coefficient (p)	0.53470
PF Slope Coefficient (m)	-1.22492	PF Power Coefficient (p)	0.81291
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1676	-	-	67.5

Vehicle Results

Average Speed, mi/h	67.5	Percent Followers, %	47.9
Segment Travel Time, minutes	0.28	Follower Density (FD), followers/mi/ln	3.3
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	461	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.03	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 3

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1864
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	461	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	5.36
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.27

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58341	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26707	PF Power Coefficient (p)	0.76853
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1864	-	-	67.0

Vehicle Results

Average Speed, mi/h	67.0	Percent Followers, %	50.3
Segment Travel Time, minutes	0.32	Follower Density (FD), followers/mi/ln	3.5
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	461	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.89	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	718
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	283	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	5.36
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29320	PF Power Coefficient (p)	0.75822
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	718	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.2
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	1.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	283	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.64	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1738
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	283	Opposing Demand Flow Rate, veh/h	217
Peak Hour Factor	0.90	Total Trucks, %	5.36
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33242	Speed Power Coefficient (p)	0.53470
PF Slope Coefficient (m)	-1.22197	PF Power Coefficient (p)	0.81449
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1738	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	35.4
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	283	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.64	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	579
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	283	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	5.36
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29320	PF Power Coefficient (p)	0.75822
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	579	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.2
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	1.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	283	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.64	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2262
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	250	Opposing Demand Flow Rate, veh/h	217
Peak Hour Factor	0.90	Total Trucks, %	7.27
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34073	Speed Power Coefficient (p)	0.53470
PF Slope Coefficient (m)	-1.20291	PF Power Coefficient (p)	0.82283
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2262	-	-	68.4

Vehicle Results

Average Speed, mi/h	68.4	Percent Followers, %	31.9
Segment Travel Time, minutes	0.38	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	250	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.24	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 8

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	980
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	250	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	7.27
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29298	PF Power Coefficient (p)	0.75850
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	980	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	36.4
Segment Travel Time, minutes	0.16	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	250	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.24	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 9

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3667
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	250	Opposing Demand Flow Rate, veh/h	183
Peak Hour Factor	0.90	Total Trucks, %	7.27
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34691	Speed Power Coefficient (p)	0.54407
PF Slope Coefficient (m)	-1.16475	PF Power Coefficient (p)	0.83728
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3667	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	30.6
Segment Travel Time, minutes	0.61	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	250	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.24	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 10

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1846
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	250	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	7.27
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58311	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26758	PF Power Coefficient (p)	0.76853
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1846	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	35.4
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	250	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.24	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2174
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	250	Opposing Demand Flow Rate, veh/h	183
Peak Hour Factor	0.90	Total Trucks, %	7.27
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32718	Speed Power Coefficient (p)	0.54407
PF Slope Coefficient (m)	-1.19845	PF Power Coefficient (p)	0.82430
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2174	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	31.8
Segment Travel Time, minutes	0.36	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	250	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.24	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 12

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1277
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	250	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	7.27
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29298	PF Power Coefficient (p)	0.75850
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1277	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	36.4
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	250	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.24	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 13

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	779
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	250	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	7.27
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29298	PF Power Coefficient (p)	0.75850

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	779	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	36.4
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	250	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.24	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	422
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	267	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	4.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29336	PF Power Coefficient (p)	0.75803
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	422	-	-	67.8

Vehicle Results

Average Speed, mi/h	67.8	Percent Followers, %	37.8
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	267	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.19	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 15

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1478
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	250	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	1.57
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57671	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28508	PF Power Coefficient (p)	0.76107
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1478	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	36.1
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	250	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.49	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 16

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	384
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	500	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	1.57
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.29

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29365	PF Power Coefficient (p)	0.75767
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	384	-	-	66.9

Vehicle Results

Average Speed, mi/h	66.9	Percent Followers, %	53.5
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	4.0
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	500	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.84	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 17

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3732
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	500	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	2.20
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.29

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.60878	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.21958	PF Power Coefficient (p)	0.78464
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3732	-	-	66.9

Vehicle Results

Average Speed, mi/h	66.9	Percent Followers, %	50.7

Segment Travel Time, minutes	0.63	Follower Density (FD), followers/mi/ln	3.8
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	500	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 18

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1360
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	500	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	2.20
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.29

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57450	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29132	PF Power Coefficient (p)	0.75866
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1360	-	-	66.9

Vehicle Results

Average Speed, mi/h	66.9	Percent Followers, %	53.4
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	4.0
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	500	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 19

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1595
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	500	Opposing Demand Flow Rate, veh/h	222
Peak Hour Factor	0.90	Total Trucks, %	2.20
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.29

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33188	Speed Power Coefficient (p)	0.53324
PF Slope Coefficient (m)	-1.22969	PF Power Coefficient (p)	0.81090
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1595	-	-	67.3

Vehicle Results

Average Speed, mi/h	67.3	Percent Followers, %	50.4
Segment Travel Time, minutes	0.27	Follower Density (FD), followers/mi/ln	3.7
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	500	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 20

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	595
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	500	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	2.20
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.29

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.43972	PF Power Coefficient (p)	0.72475
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	595	-	-	51.9

Vehicle Results

Average Speed, mi/h	51.9	Percent Followers, %	58.2
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	5.6
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	500	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.87	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 21

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	958
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	417	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	2.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.25

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.43972	PF Power Coefficient (p)	0.72475
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	958	-	-	52.2

Vehicle Results

Average Speed, mi/h	52.2	Percent Followers, %	53.4
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	4.3
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	417	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.78	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 22

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1659
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	417	Opposing Demand Flow Rate, veh/h	228
Peak Hour Factor	0.90	Total Trucks, %	2.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.25

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.33493	Speed Power Coefficient (p)	0.53180
PF Slope Coefficient (m)	-1.31418	PF Power Coefficient (p)	0.77310
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1659	-	-	52.6

Vehicle Results

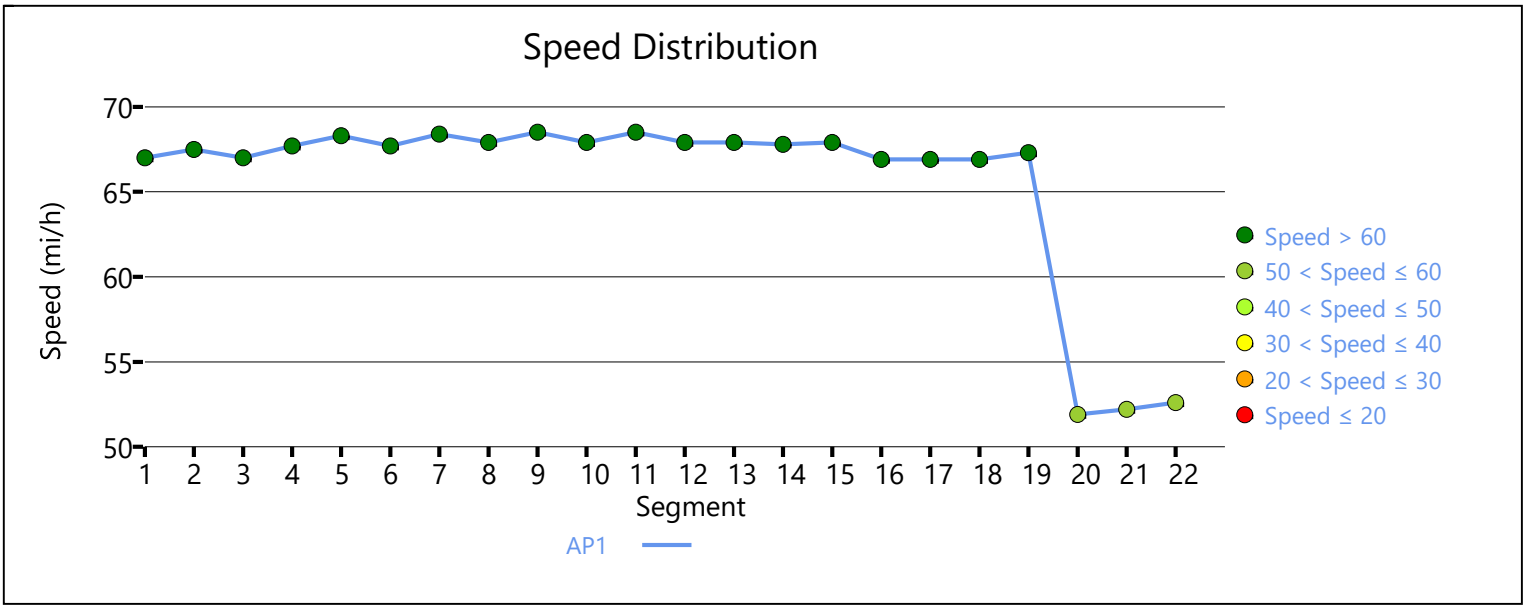
Average Speed, mi/h	52.6	Percent Followers, %	48.7
Segment Travel Time, minutes	0.36	Follower Density (FD), followers/mi/ln	3.9
Vehicle LOS	B		

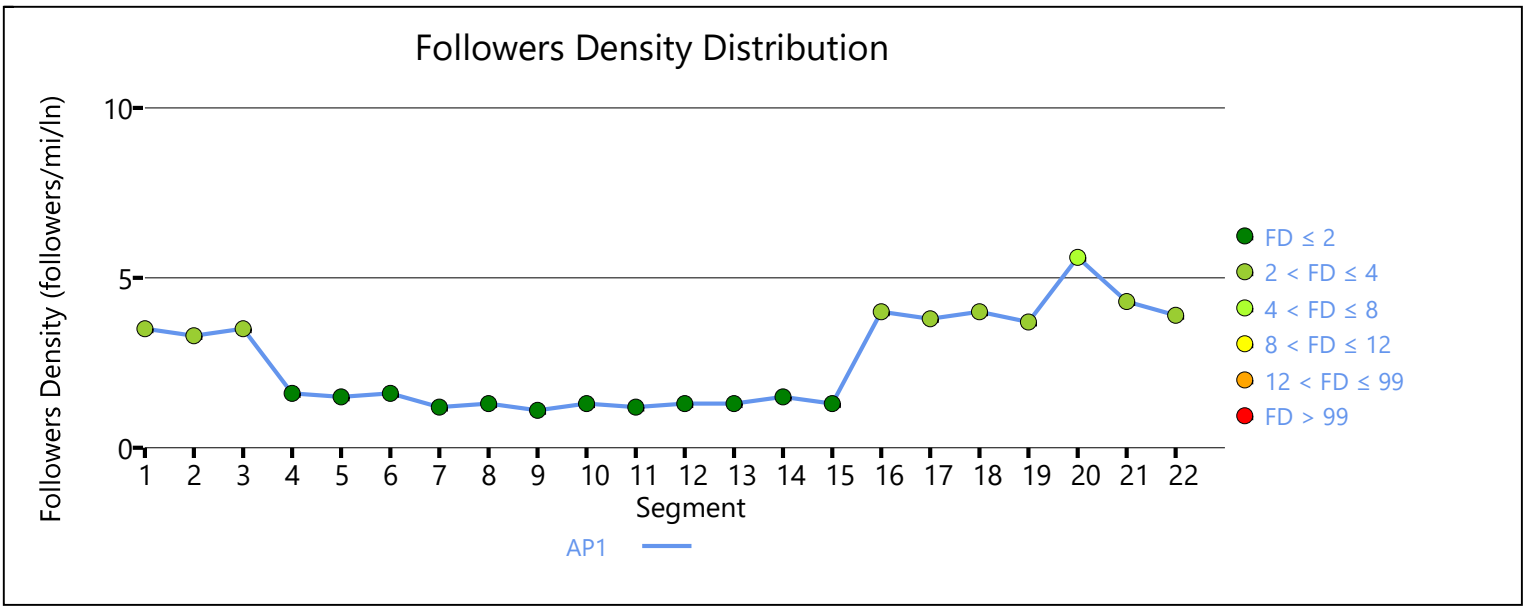
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	417	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.78	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	509	0.29	2.4	B





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	12/28/2022
Agency	HRG	Analysis Year	2022
Jurisdiction	SDDOT	Time Analyzed	AM Peak
Project Description	WB 38 West of Hartford	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	10549
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	100	Opposing Demand Flow Rate, veh/h	156
Peak Hour Factor	0.90	Total Trucks, %	12.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39553	Speed Power Coefficient (p)	0.55285
PF Slope Coefficient (m)	-1.14831	PF Power Coefficient (p)	0.81486
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	10549	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	16.1
Segment Travel Time, minutes	1.71	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	100	Bicycle Effective Width, ft	34
Bicycle LOS Score	3.11	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2793
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	100	Opposing Demand Flow Rate, veh/h	156
Peak Hour Factor	0.90	Total Trucks, %	12.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32493	Speed Power Coefficient (p)	0.55285
PF Slope Coefficient (m)	-1.17404	PF Power Coefficient (p)	0.83464
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2793	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	15.8
Segment Travel Time, minutes	0.45	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	100	Bicycle Effective Width, ft	34
Bicycle LOS Score	3.11	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3825
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	89	Opposing Demand Flow Rate, veh/h	133
Peak Hour Factor	0.90	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.05

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32808	Speed Power Coefficient (p)	0.56068
PF Slope Coefficient (m)	-1.15024	PF Power Coefficient (p)	0.84206
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3825	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	13.9
Segment Travel Time, minutes	0.62	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	89	Bicycle Effective Width, ft	35
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	791
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	89	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.05

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29355	PF Power Coefficient (p)	0.75779
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	791	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	18.7
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	89	Bicycle Effective Width, ft	35
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3414
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	89	Opposing Demand Flow Rate, veh/h	133
Peak Hour Factor	0.90	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.05

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32324	Speed Power Coefficient (p)	0.56068
PF Slope Coefficient (m)	-1.15659	PF Power Coefficient (p)	0.84001
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3414	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	14.1
Segment Travel Time, minutes	0.55	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	89	Bicycle Effective Width, ft	35
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	286
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	89	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.05

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29355	PF Power Coefficient (p)	0.75779
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	286	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	18.7
Segment Travel Time, minutes	0.05	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	89	Bicycle Effective Width, ft	35
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	463
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	94	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29353	PF Power Coefficient (p)	0.75782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	463	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	19.5
Segment Travel Time, minutes	0.08	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	94	Bicycle Effective Width, ft	34
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4822
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	94	Opposing Demand Flow Rate, veh/h	133
Peak Hour Factor	0.90	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33883	Speed Power Coefficient (p)	0.56068
PF Slope Coefficient (m)	-1.13939	PF Power Coefficient (p)	0.84436
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4822	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	14.4
Segment Travel Time, minutes	0.78	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	94	Bicycle Effective Width, ft	34
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	861
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	94	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29353	PF Power Coefficient (p)	0.75782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	861	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	19.5
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	94	Bicycle Effective Width, ft	34
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1556
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	94	Opposing Demand Flow Rate, veh/h	133
Peak Hour Factor	0.90	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.29636	Speed Power Coefficient (p)	0.56068
PF Slope Coefficient (m)	-1.20943	PF Power Coefficient (p)	0.81751
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1556	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	16.1
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	94	Bicycle Effective Width, ft	34
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	799
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	94	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29353	PF Power Coefficient (p)	0.75782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	799	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	19.5
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	94	Bicycle Effective Width, ft	34
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 12

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	857
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	94	Opposing Demand Flow Rate, veh/h	133
Peak Hour Factor	0.90	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.29195	Speed Power Coefficient (p)	0.56068
PF Slope Coefficient (m)	-1.22114	PF Power Coefficient (p)	0.81213
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	857	-	-	70.0

Vehicle Results			
Average Speed, mi/h	70.0	Percent Followers, %	16.4
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	94	Bicycle Effective Width, ft	34
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 13

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1288
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	94	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39677	PF Power Coefficient (p)	0.73640

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1288	-	-	60.0

Vehicle Results

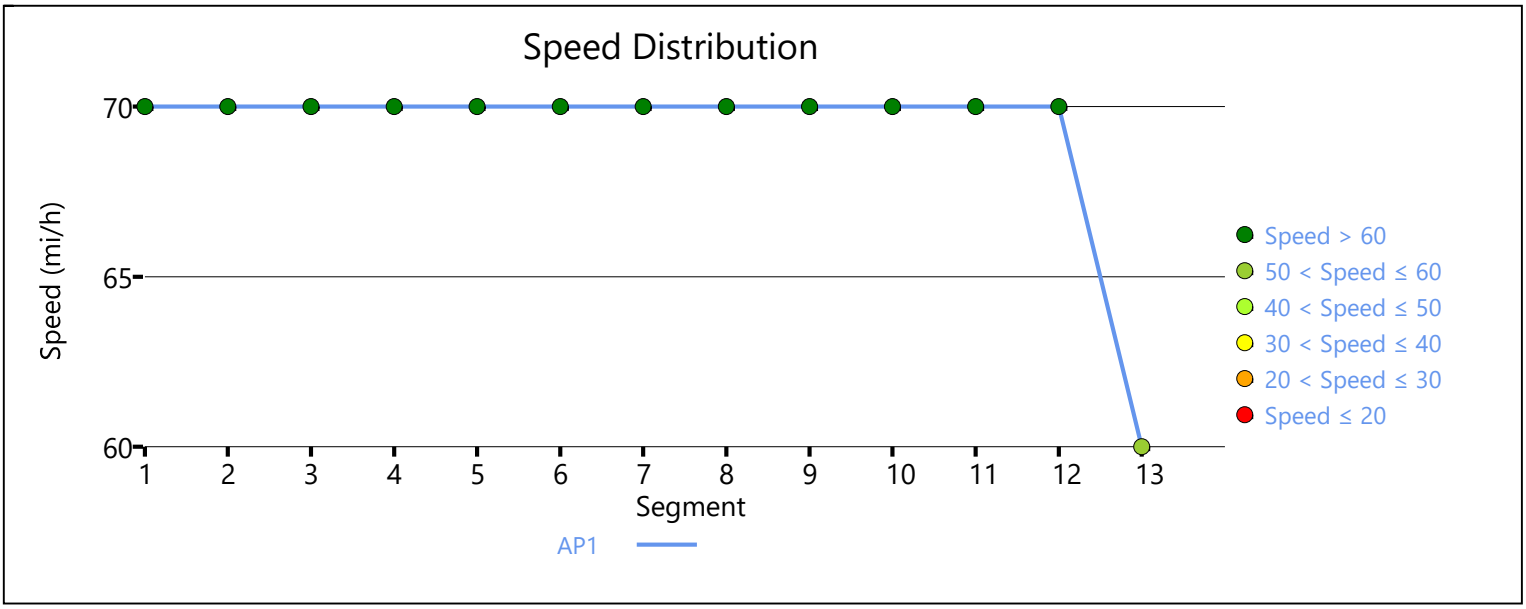
Average Speed, mi/h	60.0	Percent Followers, %	21.8
Segment Travel Time, minutes	0.24	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

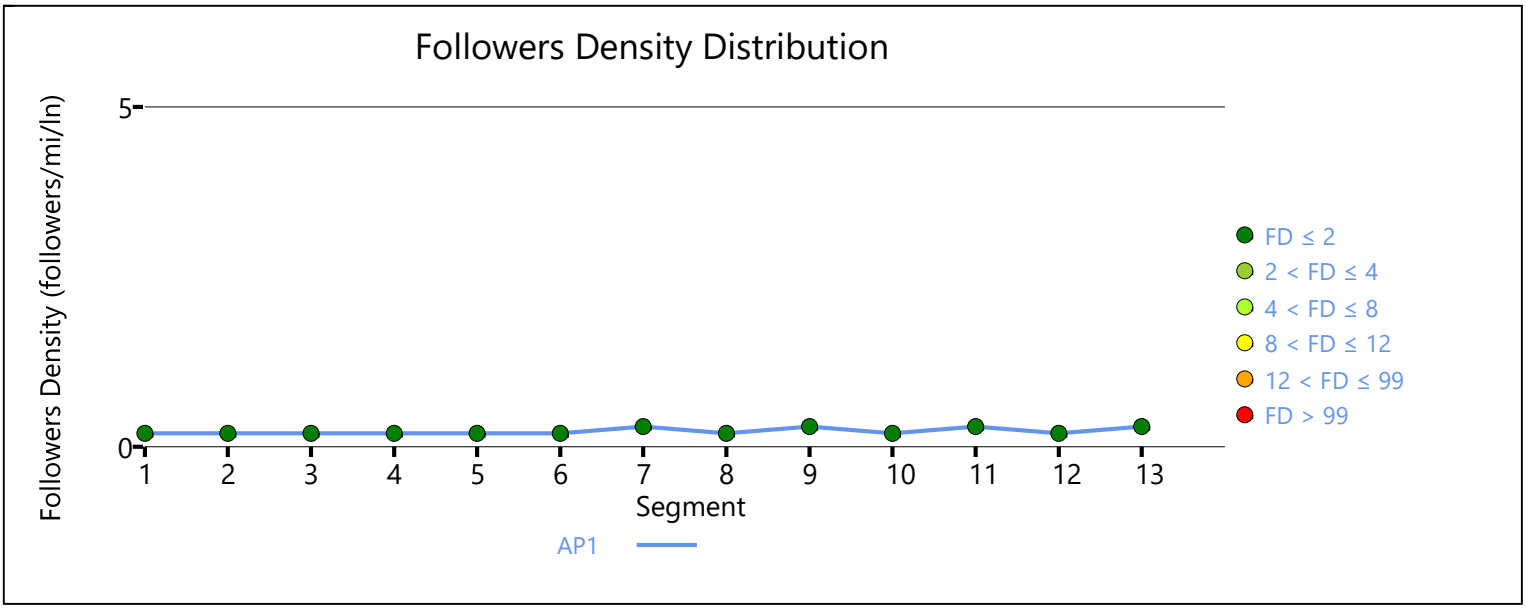
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	94	Bicycle Effective Width, ft	34
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	4.79
Bicycle LOS	A		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	131	0.00	0.2	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	12/28/2022
Agency	HRG	Analysis Year	2022
Jurisdiction	SDDOT	Time Analyzed	PM Peak
Project Description	WB 38 West of Hartford	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	10549
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	172	Opposing Demand Flow Rate, veh/h	111
Peak Hour Factor	0.90	Total Trucks, %	1.94
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.37551	Speed Power Coefficient (p)	0.56943
PF Slope Coefficient (m)	-1.19248	PF Power Coefficient (p)	0.79019
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5280	-	-	59.0

Vehicle Results

Average Speed, mi/h	59.0	Percent Followers, %	25.7
Segment Travel Time, minutes	2.03	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	172	Bicycle Effective Width, ft	28
Bicycle LOS Score	1.35	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2793
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	172	Opposing Demand Flow Rate, veh/h	111
Peak Hour Factor	0.90	Total Trucks, %	1.94
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30491	Speed Power Coefficient (p)	0.56943
PF Slope Coefficient (m)	-1.16207	PF Power Coefficient (p)	0.83768
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2793	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.4
Segment Travel Time, minutes	0.46	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	172	Bicycle Effective Width, ft	28
Bicycle LOS Score	1.35	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3825
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	156	Opposing Demand Flow Rate, veh/h	89
Peak Hour Factor	0.90	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30611	Speed Power Coefficient (p)	0.57939
PF Slope Coefficient (m)	-1.13558	PF Power Coefficient (p)	0.84742
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3825	-	-	69.2

Vehicle Results

Average Speed, mi/h	69.2	Percent Followers, %	20.9
Segment Travel Time, minutes	0.63	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	156	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.08	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	791
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	156	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29358	PF Power Coefficient (p)	0.75776
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	791	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.1
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	156	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.08	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3414
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	156	Opposing Demand Flow Rate, veh/h	89
Peak Hour Factor	0.90	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30127	Speed Power Coefficient (p)	0.57939
PF Slope Coefficient (m)	-1.14184	PF Power Coefficient (p)	0.84531
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3414	-	-	69.2

Vehicle Results

Average Speed, mi/h	69.2	Percent Followers, %	21.1
Segment Travel Time, minutes	0.56	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	156	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.08	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	286
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	156	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29358	PF Power Coefficient (p)	0.75776
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	286	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.1
Segment Travel Time, minutes	0.05	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	156	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.08	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	463
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	156	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29347	PF Power Coefficient (p)	0.75789
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	463	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.1
Segment Travel Time, minutes	0.08	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	156	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.32	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4822
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	156	Opposing Demand Flow Rate, veh/h	83
Peak Hour Factor	0.90	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.31376	Speed Power Coefficient (p)	0.58212
PF Slope Coefficient (m)	-1.12268	PF Power Coefficient (p)	0.85072
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4822	-	-	69.2

Vehicle Results

Average Speed, mi/h	69.2	Percent Followers, %	20.6
Segment Travel Time, minutes	0.79	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	156	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.32	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	861
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	156	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29347	PF Power Coefficient (p)	0.75789
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	861	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.1
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	156	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.32	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1556
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	156	Opposing Demand Flow Rate, veh/h	83
Peak Hour Factor	0.90	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.27129	Speed Power Coefficient (p)	0.58212
PF Slope Coefficient (m)	-1.19156	PF Power Coefficient (p)	0.82314
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1556	-	-	69.2

Vehicle Results

Average Speed, mi/h	69.2	Percent Followers, %	22.7
Segment Travel Time, minutes	0.26	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	156	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.32	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	799
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	156	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29347	PF Power Coefficient (p)	0.75789
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	799	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.1
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	156	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.32	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 12

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	857
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	156	Opposing Demand Flow Rate, veh/h	83
Peak Hour Factor	0.90	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.26688	Speed Power Coefficient (p)	0.58212
PF Slope Coefficient (m)	-1.20307	PF Power Coefficient (p)	0.81765
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	857	-	-	69.2

Vehicle Results			
Average Speed, mi/h	69.2	Percent Followers, %	23.1
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	156	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.32	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 13

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1288
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	156	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29347	PF Power Coefficient (p)	0.75789

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1288	-	-	68.6

Vehicle Results

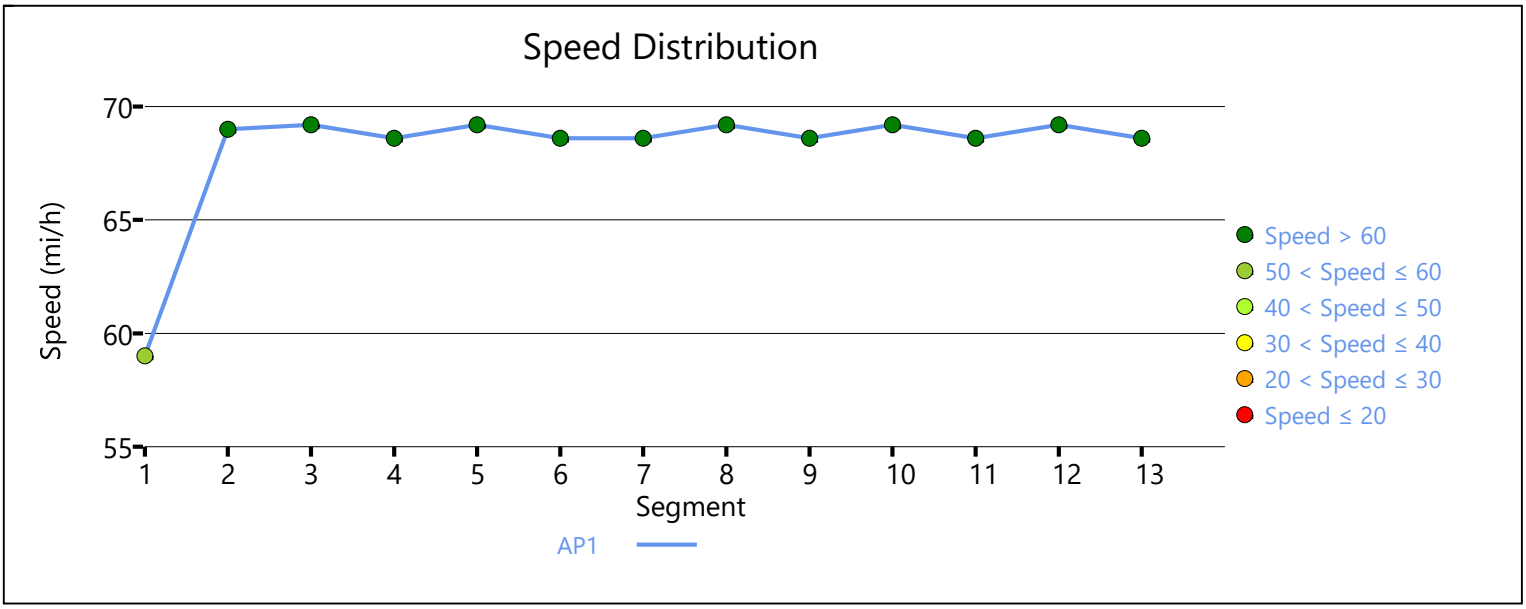
Average Speed, mi/h	68.6	Percent Followers, %	27.1
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

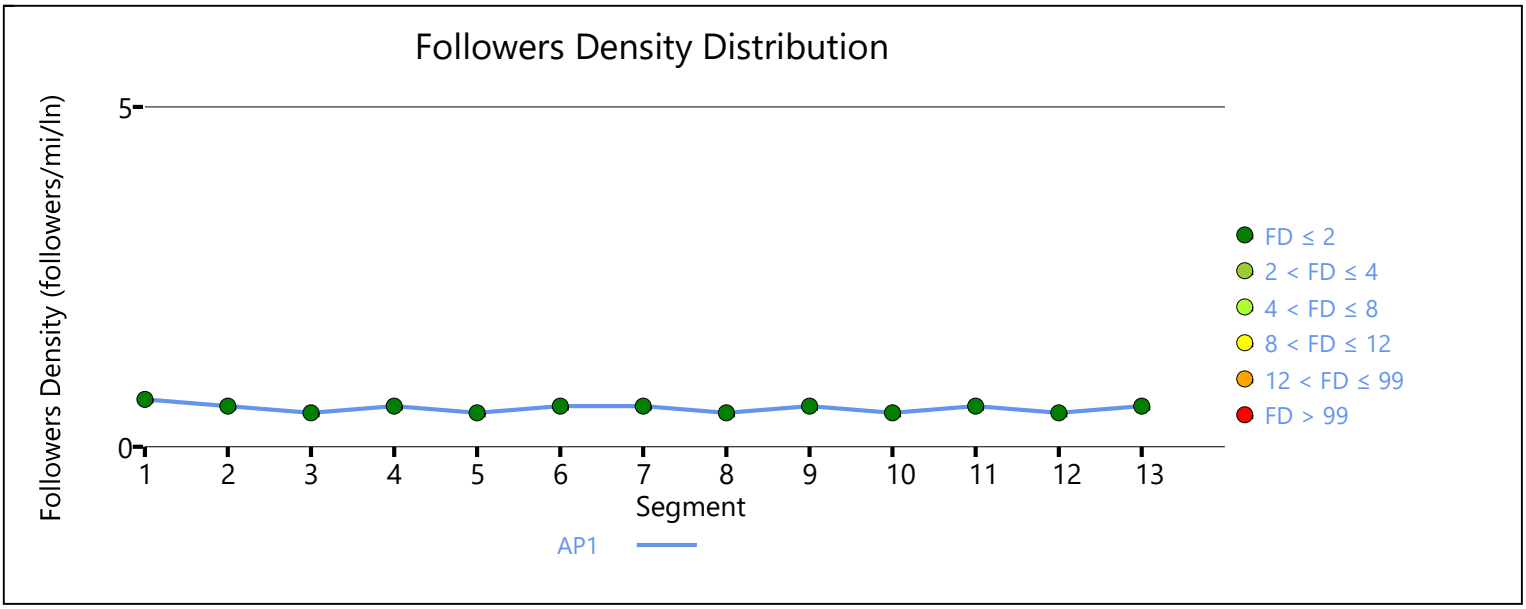
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	156	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.32	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	224	0.05	0.6	A





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Appendix C – Crash Data

P P 12/23/20 12:30

S 2017742

- Vehicle Path
- Parked Vehicle
- Backing Vehicle
- Rear End
- Head On
- Sideswipe
- Left Turn
- Right Turn
- U Turn
- Unknown dir.
- Ran off road
- More Units
- Pedestrian
- Fixed Object
- Wild Animal

- PDO
- Injury
- Fatal

- Clear
- Cloudy
- Fog
- Rain
- Snow
- Wind

D- Dry
W- Wet
S - Winter
O- Other

- Drugs
- Alcohol
- Distracted
- Speed
- Fatigue
- Work Zone

T -Truck
M-Motorcycle
P -Passenger
A -ATV
R -Tractor
E -Equipment
B -Bicycle
L -Railway

SD HWY 38 and 460 AVE

P P 01/10/19 19:40
D 1905291

- Vehicle Path
- Parked Vehicle
- Backing Vehicle
- Rear End
- Head On
- Sideswipe
- Left Turn
- Right Turn
- U Turn
- Unknown dir.
- Ran off road
- More Units
- Pedestrian
- Fixed Object
- Wild Animal

- PDO
- Injury
- Fatal

- Clear
- Cloudy
- Fog
- Rain
- Snow
- Wind

D- Dry
W- Wet
S - Winter
O- Other

- Drugs
- Alcohol
- Distracted
- Speed
- Fatigue
- Work Zone

T -Truck
M-Motorcycle
P -Passenger
A -ATV
R -Tractor
E -Equipment
B -Bicycle
L -Railway

P P 01/12/20 14:37
S 2000512

SD HWY 38 and ELLIS RD

P 03/02/21 11:29
D 2103103

Vehicle Path	U Turn
Parked Vehicle	Unknown dir.
Backing Vehicle	Ran off road
Rear End	More Units
Head On	Pedestrian
Sideswipe	Fixed Object
Left Turn	Wild Animal
Right Turn	

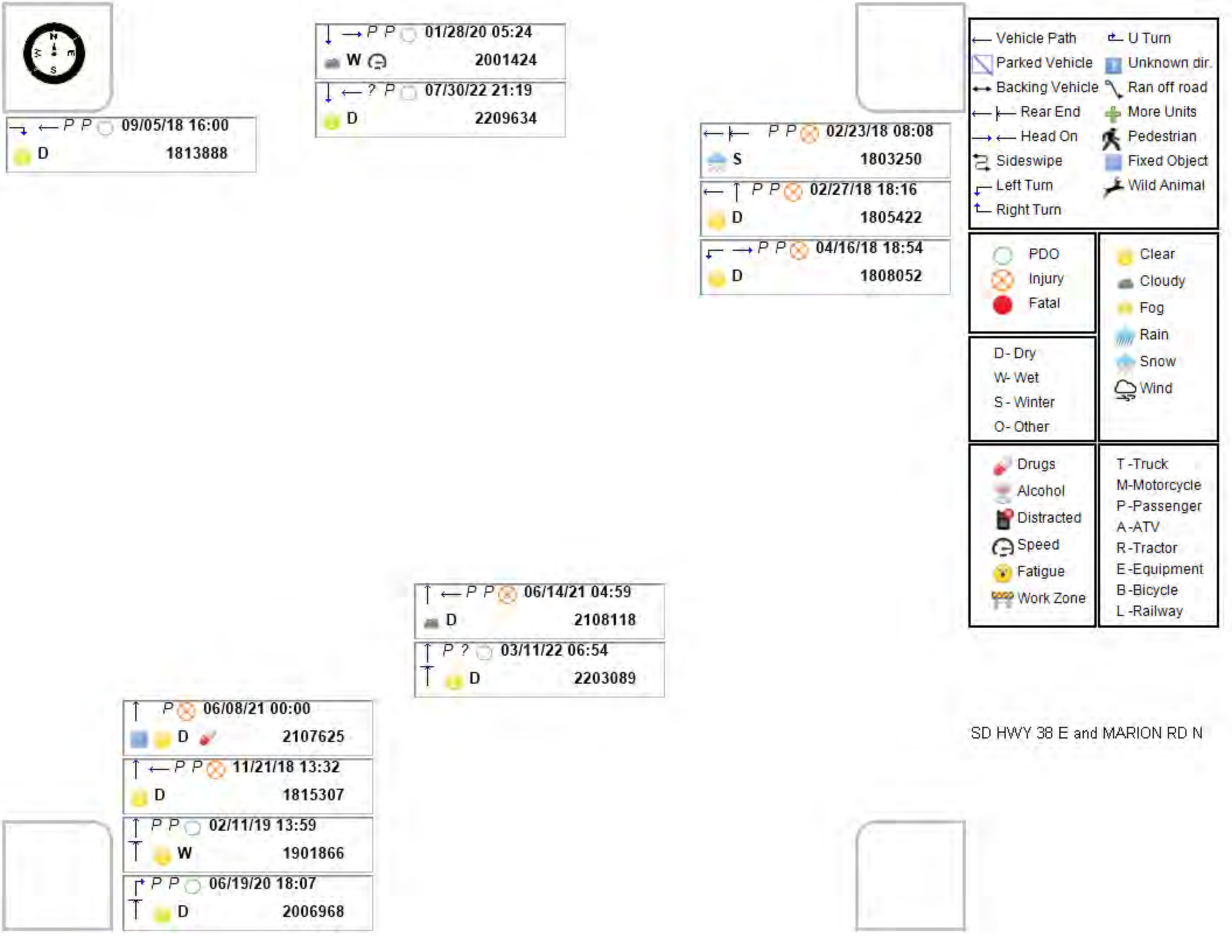
PDO	Clear
Injury	Cloudy
Fatal	Fog
	Rain
	Snow
	Wind

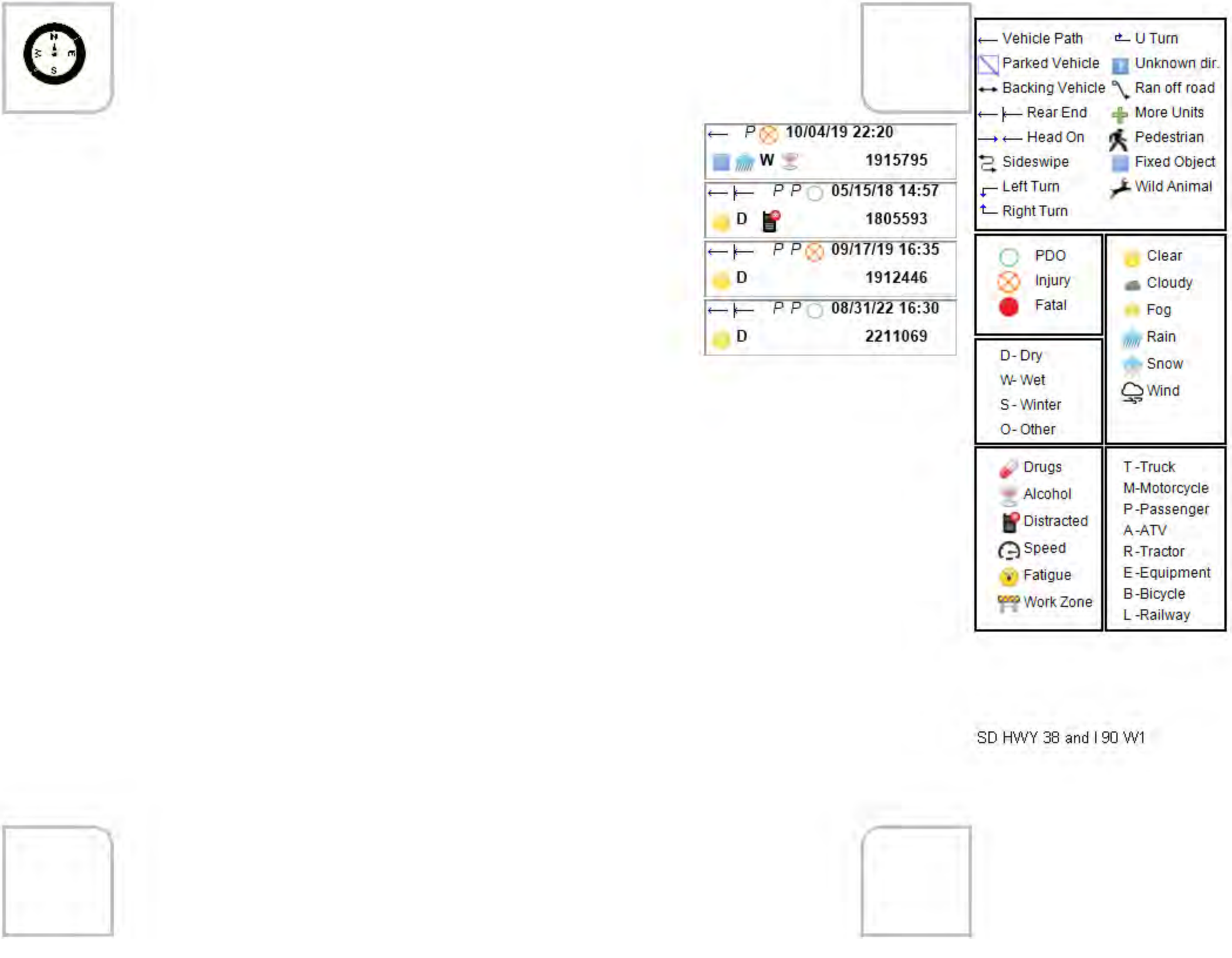
D- Dry	
W- Wet	
S - Winter	
O- Other	

Drugs	T -Truck
Alcohol	M-Motorcycle
Distracted	P -Passenger
Speed	A -ATV
Fatigue	R -Tractor
Work Zone	E -Equipment
	B -Bicycle
	L -Railway

P P 02/02/19 08:42
D 1905301

SD HWY 38 and COLTON RD


01/28/20 05:24
W
2001424
07/30/22 21:19
D
2209634
09/05/18 16:00
D
1813888
02/23/18 08:08
S
1803250
02/27/18 18:16
D
1805422
04/16/18 18:54
D
1808052
Vehicle Path
Parked Vehicle
Backing Vehicle
Rear End
Head On
Sideswipe
Left Turn
Right Turn
U Turn
Unknown dir.
Ran off road
More Units
Pedestrian
Fixed Object
Wild Animal
PDO
Injury
Fatal
Clear
Cloudy
Fog
Rain
Snow
Wind
D- Dry
W- Wet
S - Winter
O- Other
Drugs
Alcohol
Distracted
Speed
Fatigue
Work Zone
T -Truck
M-Motorcycle
P -Passenger
A -ATV
R -Tractor
E -Equipment
B -Bicycle
L -Railway
06/14/21 04:59
D
2108118
03/11/22 06:54
D
2203089
06/08/21 00:00
D
2107625
11/21/18 13:32
D
1815307
02/11/19 13:59
W
1901866
06/19/20 18:07
D
2006968
SD HWY 38 E and MARION RD N


10/04/19 22:20
1915795
05/15/18 14:57
1805593
09/17/19 16:35
1912446
08/31/22 16:30
2211069
Vehicle Path
Parked Vehicle
Backing Vehicle
Rear End
Head On
Sideswipe
Left Turn
Right Turn
U Turn
Unknown dir.
Ran off road
More Units
Pedestrian
Fixed Object
Wild Animal
PDO
Injury
Fatal
Clear
Cloudy
Fog
Rain
Snow
Wind
D- Dry
W- Wet
S - Winter
O- Other
Drugs
Alcohol
Distracted
Speed
Fatigue
Work Zone
T -Truck
M-Motorcycle
P -Passenger
A -ATV
R -Tractor
E -Equipment
B -Bicycle
L -Railway
SD HWY 38 and I 90 W1

P P 11/22/19 14:25

D 1918396

- Vehicle Path
- Parked Vehicle
- Backing Vehicle
- Rear End
- Head On
- Sideswipe
- Left Turn
- Right Turn
- U Turn
- Unknown dir.
- Ran off road
- More Units
- Pedestrian
- Fixed Object
- Wild Animal

- PDO
- Injury
- Fatal

- Clear
- Cloudy
- Fog
- Rain
- Snow
- Wind

D- Dry
W- Wet
S - Winter
O- Other

- Drugs
- Alcohol
- Distracted
- Speed
- Fatigue
- Work Zone

T -Truck
M-Motorcycle
P -Passenger
A -ATV
R -Tractor
E -Equipment
B -Bicycle
L -Railway

SD HWY 38 and 462 AVE

P P 05/27/20 12:26
D 2006176

R P 10/15/18 09:50
D 1813558

P P 12/26/20 07:35
D 2017748

Vehicle Path
Parked Vehicle
Backing Vehicle
Rear End
Head On
Sideswipe
Left Turn
Right Turn
U Turn
Unknown dir.
Ran off road
More Units
Pedestrian
Fixed Object
Wild Animal

PDO
Injury
Fatal

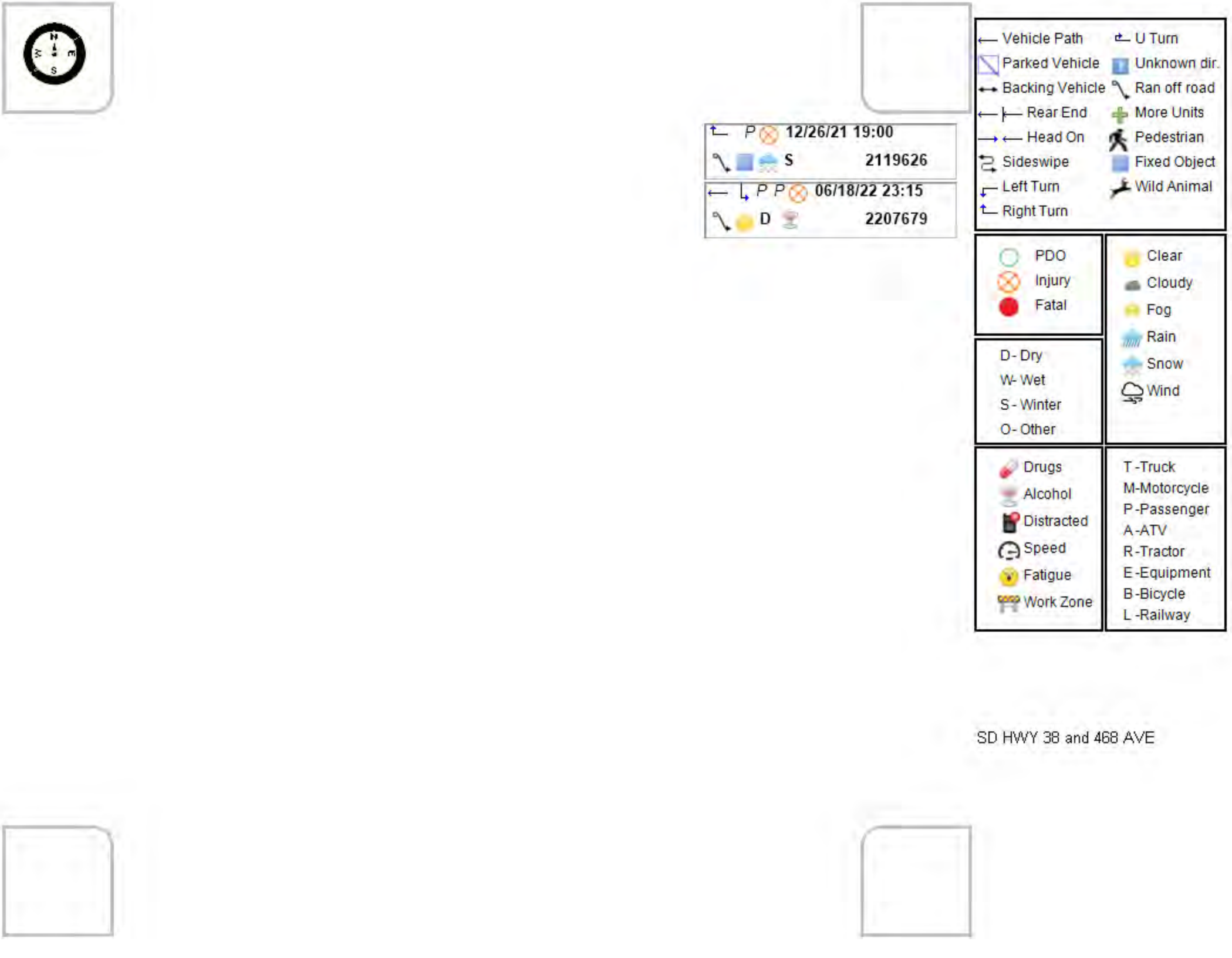
Clear
Cloudy
Fog
Rain
Snow
Wind

D- Dry
W- Wet
S - Winter
O- Other

Drugs
Alcohol
Distracted
Speed
Fatigue
Work Zone

T -Truck
M-Motorcycle
P -Passenger
A -ATV
R -Tractor
E -Equipment
B -Bicycle
L -Railway

SD HWY 38 and 470 AVE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S 2119626
P P 06/18/22 23:15
D 2207679
Vehicle Path
Parked Vehicle
Backing Vehicle
Rear End
Head On
Sideswipe
Left Turn
Right Turn
U Turn
Unknown dir.
Ran off road
More Units
Pedestrian
Fixed Object
Wild Animal
PDO
Injury
Fatal
Clear
Cloudy
Fog
Rain
Snow
Wind
D- Dry
W- Wet
S - Winter
O- Other
Drugs
Alcohol
Distracted
Speed
Fatigue
Work Zone
T -Truck
M-Motorcycle
P -Passenger
A -ATV
R -Tractor
E -Equipment
B -Bicycle
L -Railway
SD HWY 38 and 468 AVE

P 01/28/21 20:35
S 2101049

R P 09/17/22 17:07
D 2211949

- Vehicle Path
- Parked Vehicle
- Backing Vehicle
- Rear End
- Head On
- Sideswipe
- Left Turn
- Right Turn
- U Turn
- Unknown dir.
- Ran off road
- More Units
- Pedestrian
- Fixed Object
- Wild Animal

- PDO
- Injury
- Fatal

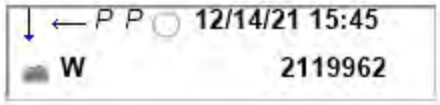
- Clear
- Cloudy
- Fog
- Rain
- Snow
- Wind

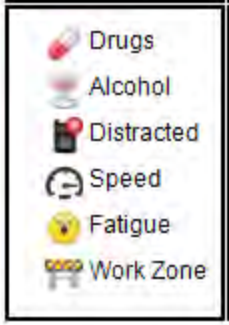
- D- Dry
- W- Wet
- S - Winter
- O- Other

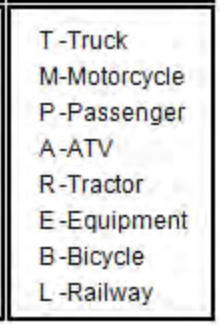
- Drugs
- Alcohol
- Distracted
- Speed
- Fatigue
- Work Zone

- T -Truck
- M-Motorcycle
- P -Passenger
- A -ATV
- R -Tractor
- E -Equipment
- B -Bicycle
- L -Railway

SD HWY 38 and SD HWY 19







SD HWY 38 and MAIN AVE

P 12/15/19 19:55

S 1920267

- Vehicle Path
- Parked Vehicle
- Backing Vehicle
- Rear End
- Head On
- Sideswipe
- Left Turn
- Right Turn
- U Turn
- Unknown dir.
- Ran off road
- More Units
- Pedestrian
- Fixed Object
- Wild Animal

- PDO
- Injury
- Fatal

- Clear
- Cloudy
- Fog
- Rain
- Snow
- Wind

D- Dry
W- Wet
S - Winter
O- Other

- Drugs
- Alcohol
- Distracted
- Speed
- Fatigue
- Work Zone

T -Truck
M-Motorcycle
P -Passenger
A -ATV
R -Tractor
E -Equipment
B -Bicycle
L -Railway

SD HWY 38 and CRESTVIEW DR

Vehicle Path	U Turn
Parked Vehicle	Unknown dir.
Backing Vehicle	Ran off road
Rear End	More Units
Head On	Pedestrian
Sideswipe	Fixed Object
Left Turn	Wild Animal
Right Turn	

PDO	Clear
Injury	Cloudy
Fatal	Fog
	Rain
	Snow
	Wind

D- Dry	
W- Wet	
S - Winter	
O- Other	

Drugs	T -Truck
Alcohol	M-Motorcycle
Distracted	P -Passenger
Speed	A -ATV
Fatigue	R -Tractor
Work Zone	E -Equipment
	B -Bicycle
	L -Railway

← T P	11/22/19 17:10
D	1917796

SD HWY 38 and 466 AVE

P R 03/21/19 19:00

D 1903145

- Vehicle Path
- Parked Vehicle
- Backing Vehicle
- Rear End
- Head On
- Sideswipe
- Left Turn
- Right Turn
- U Turn
- Unknown dir.
- Ran off road
- More Units
- Pedestrian
- Fixed Object
- Wild Animal

- PDO
- Injury
- Fatal

- Clear
- Cloudy
- Fog
- Rain
- Snow
- Wind

D- Dry
W- Wet
S - Winter
O- Other

- Drugs
- Alcohol
- Distracted
- Speed
- Fatigue
- Work Zone

T -Truck
M-Motorcycle
P -Passenger
A -ATV
R -Tractor
E -Equipment
B -Bicycle
L -Railway

SD HWY 38 and 459 AVE

P P 06/14/20 18:00

D 2007493

- Vehicle Path
- Parked Vehicle
- Backing Vehicle
- Rear End
- Head On
- Sideswipe
- Left Turn
- Right Turn
- U Turn
- Unknown dir.
- Ran off road
- More Units
- Pedestrian
- Fixed Object
- Wild Animal

- PDO
- Injury
- Fatal

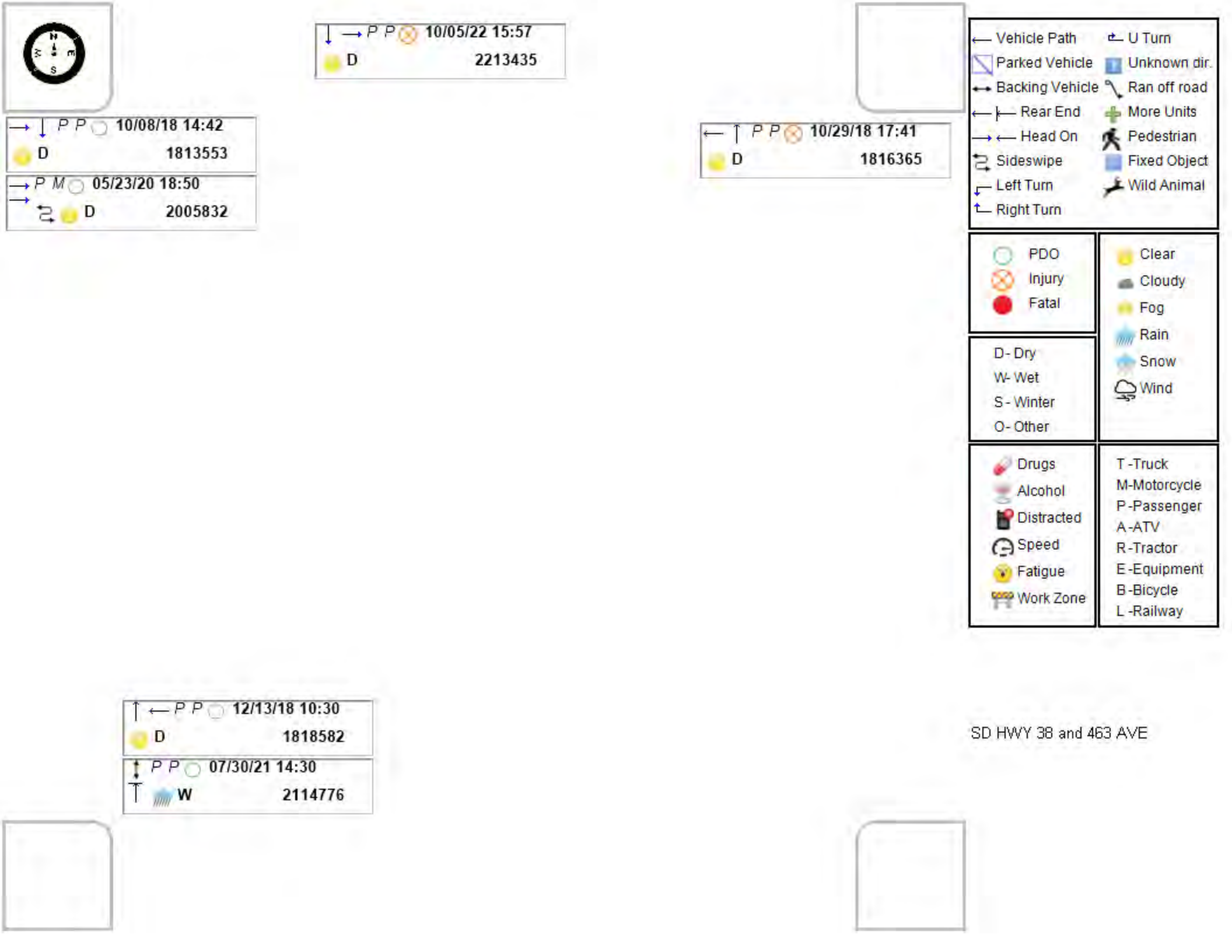
- Clear
- Cloudy
- Fog
- Rain
- Snow
- Wind

D- Dry
W- Wet
S - Winter
O- Other

- Drugs
- Alcohol
- Distracted
- Speed
- Fatigue
- Work Zone

T -Truck
M-Motorcycle
P -Passenger
A -ATV
R -Tractor
E -Equipment
B -Bicycle
L -Railway

SD HWY 38 and 466 AVE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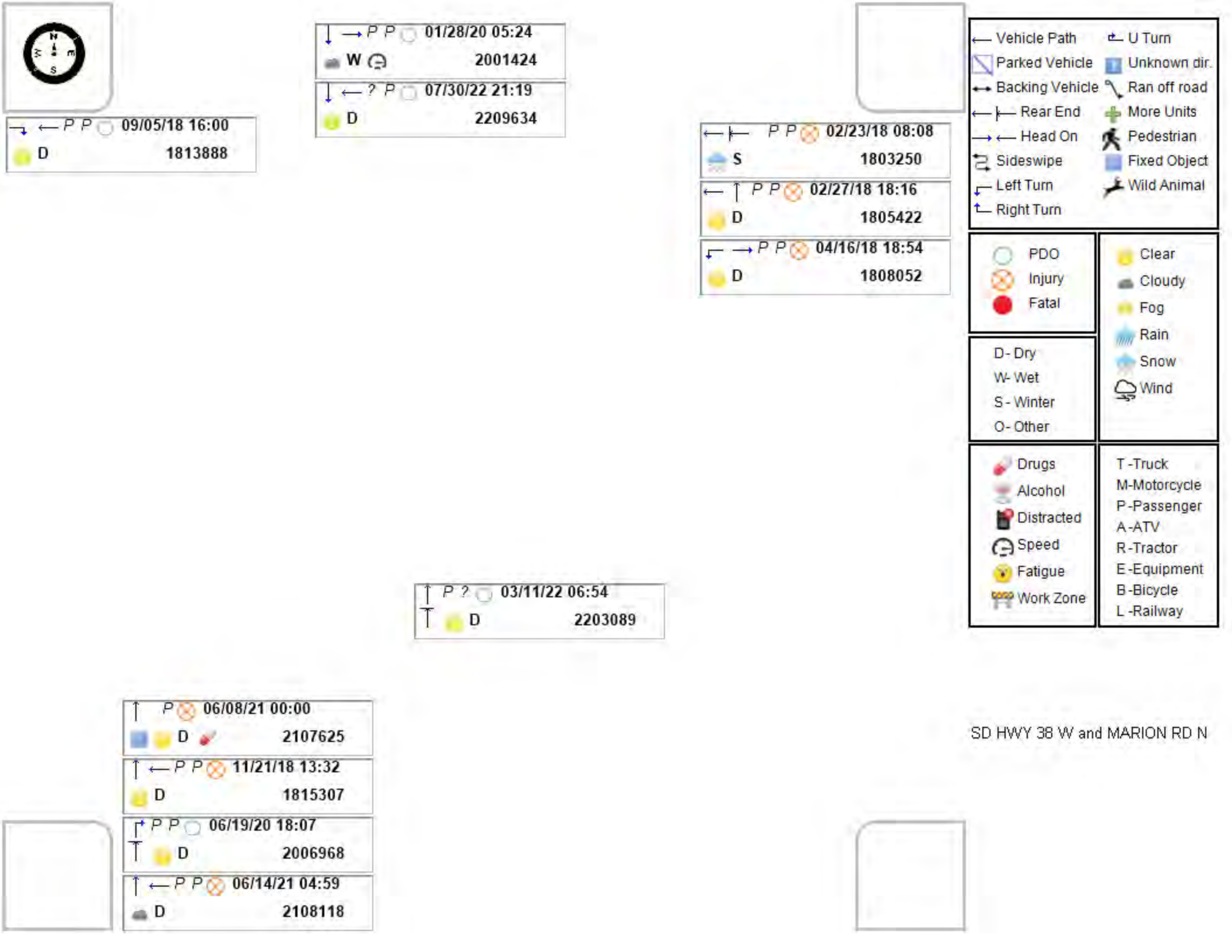
P P 10/08/18 14:42
D 1813553
P M 05/23/20 18:50
D 2005832
P P 10/29/18 17:41
D 1816365
P P 12/13/18 10:30
D 1818582
P P 07/30/21 14:30
W 2114774
Vehicle Path
Parked Vehicle
Backing Vehicle
Rear End
Head On
Sideswipe
Left Turn
Right Turn
U Turn
Unknown dir.
Ran off road
More Units
Pedestrian
Fixed Object
Wild Animal
PDO
Injury
Fatal
Clear
Cloudy
Fog
Rain
Snow
Wind
D- Dry
W- Wet
S - Winter
O- Other
Drugs
Alcohol
Distracted
Speed
Fatigue
Work Zone
T -Truck
M-Motorcycle
P -Passenger
A -ATV
R -Tractor
E -Equipment
B -Bicycle
L -Railway
SD HWY 38 and 463 AVE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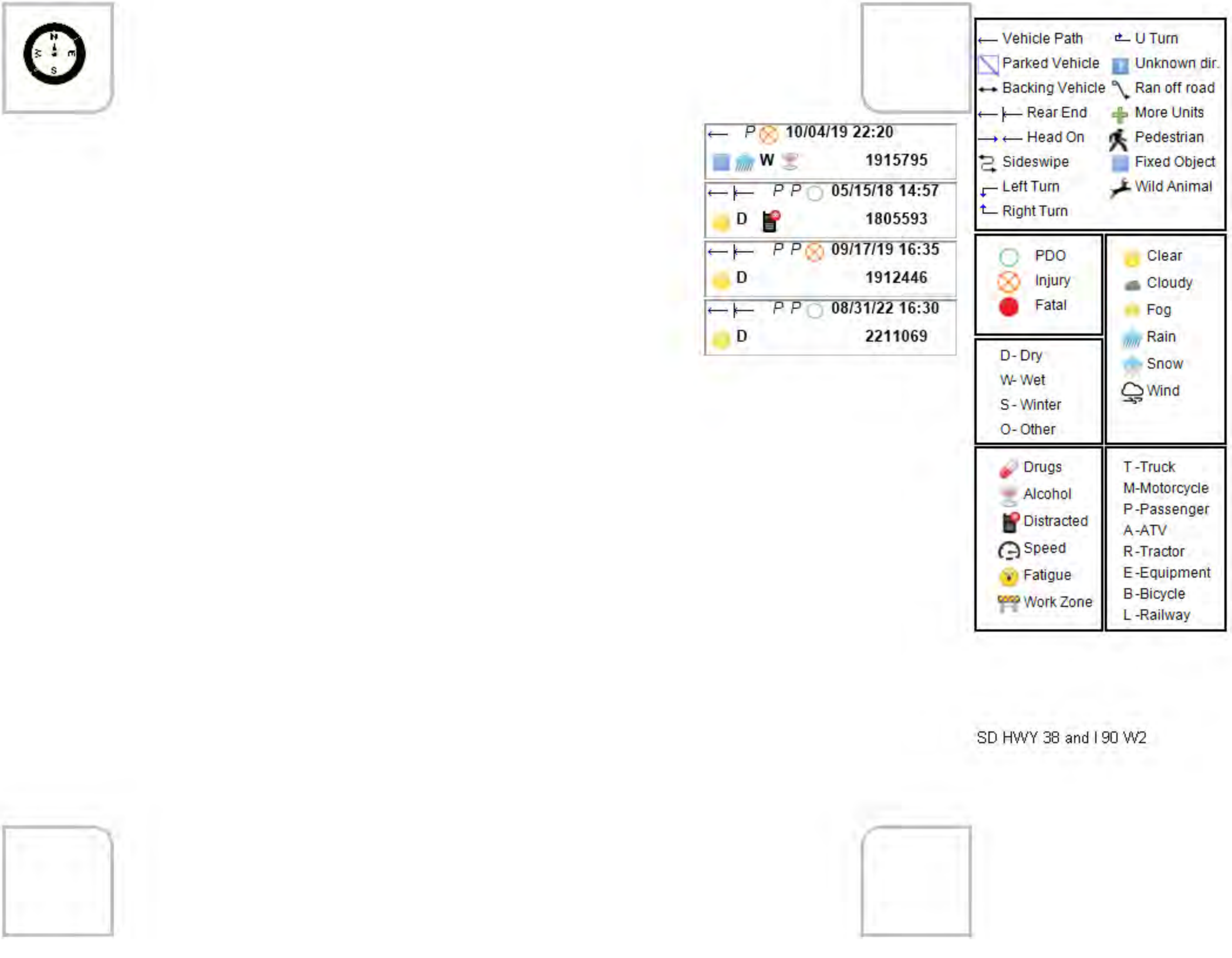
W 2001424
? P 07/30/22 21:19
D 2209634
P P 09/05/18 16:00
D 1813888
P P 02/23/18 08:08
S 1803250
P P 02/27/18 18:16
D 1805422
P P 04/16/18 18:54
D 1808052
P ? 03/11/22 06:54
D 2203089
P 06/08/21 00:00
D 2107625
P P 11/21/18 13:32
D 1815307
P P 06/19/20 18:07
D 2006968
P P 06/14/21 04:59
D 2108118
Vehicle Path
Parked Vehicle
Backing Vehicle
Rear End
Head On
Sideswipe
Left Turn
Right Turn
U Turn
Unknown dir.
Ran off road
More Units
Pedestrian
Fixed Object
Wild Animal
PDO
Injury
Fatal
D- Dry
W- Wet
S - Winter
O- Other
Clear
Cloudy
Fog
Rain
Snow
Wind
Drugs
Alcohol
Distracted
Speed
Fatigue
Work Zone
T -Truck
M-Motorcycle
P -Passenger
A -ATV
R -Tractor
E -Equipment
B -Bicycle
L -Railway
SD HWY 38 W and MARION RD N


10/04/19 22:20
1915795
05/15/18 14:57
1805593
09/17/19 16:35
1912446
08/31/22 16:30
2211069
Vehicle Path
Parked Vehicle
Backing Vehicle
Rear End
Head On
Sideswipe
Left Turn
Right Turn
U Turn
Unknown dir.
Ran off road
More Units
Pedestrian
Fixed Object
Wild Animal
PDO
Injury
Fatal
Clear
Cloudy
Fog
Rain
Snow
Wind
D- Dry
W- Wet
S - Winter
O- Other
Drugs
Alcohol
Distracted
Speed
Fatigue
Work Zone
T -Truck
M-Motorcycle
P -Passenger
A -ATV
R -Tractor
E -Equipment
B -Bicycle
L -Railway
SD HWY 38 and I 90 W2

P P 06/01/21 11:07
D 2107103

P P 02/27/20 15:20
D 2003056

- Vehicle Path
- Parked Vehicle
- Backing Vehicle
- Rear End
- Head On
- Sideswipe
- Left Turn
- Right Turn
- U Turn
- Unknown dir.
- Ran off road
- More Units
- Pedestrian
- Fixed Object
- Wild Animal

- PDO
- Injury
- Fatal

- Clear
- Cloudy
- Fog
- Rain
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D- Dry
W- Wet
S - Winter
O- Other

- Drugs
- Alcohol
- Distracted
- Speed
- Fatigue
- Work Zone

T -Truck
M-Motorcycle
P -Passenger
A -ATV
R -Tractor
E -Equipment
B -Bicycle
L -Railway

SD HWY 38 and 2ND ST

P 01/05/18 19:15 D 1800312	P 04/07/18 02:30 D 1810158	P 06/15/18 12:20 D 1808938	P 09/30/18 20:50 D 1812931	P 10/24/18 19:58 D 1815999
P 11/07/18 01:30 D 1814995	P 01/03/19 18:31 D 1900081	P 01/18/19 17:00 S 1900502	P 02/12/19 08:42 S 1905632	P 05/01/19 21:50 W 1904468
P 05/17/19 02:25 W 1905494	P 07/19/19 16:34 D 1909274	P 07/25/19 18:00 D 1909596	P 11/07/19 18:03 D 1916630	P 11/09/19 05:20 D 1917006
P 11/22/19 16:54 D 1917903	P 11/14/18 19:30 D 1816784	P P 01/02/18 14:29 S 1800061	P P 02/10/18 12:28 D 1802197	P P 03/26/18 16:51 W 1804142
P P 06/01/18 15:50 D 1809254	P P 03/14/19 13:33 S 1905423	P P 04/05/19 09:18 D 1904193	P P 07/02/19 15:41 D 1908980	P P 09/20/19 16:18 D 1913864

P 06/08/18 07:00 D 1808054	M 09/14/18 18:17 D 1811894	P 09/29/18 18:30 D 1812849	P 10/24/18 06:30 D 1817448	P 11/03/18 06:30 W 1815581
P 11/06/18 17:30 D 1816366	P 11/13/18 18:50 D 1818676	P 12/01/18 04:45 S 1815735	P 12/09/18 18:25 D 1817678	P 12/25/18 18:45 D 1817938
P 08/05/19 05:45 D 1910161	P 08/23/19 07:00 D 1911451	P 10/14/19 06:30 D 1914281	P 10/26/19 06:54 D 1915799	P 02/29/20 19:23 D 2002941
P 03/02/20 23:25 D 2003312	P 04/16/20 05:40 D 2004496	P 09/08/20 20:00 D 2010577	P 09/28/20 06:40 D 2011798	P 10/20/20 07:00 W 2013338
P M 07/08/18 11:40 D 1808530	P P 12/31/18 11:05 S 1817745	P P 03/05/19 09:15 S 1905287	T T 04/12/19 10:28 S 1903696	M P 08/29/20 18:4 D 2010485

- Vehicle Path
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- Injury
- Fatal

D - Dry
W - Wet
S - Winter
O - Other

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- Cloudy
- Fog
- Rain
- Snow
- Wind

- Drugs
- Alcohol
- Distracted
- Speed
- Fatigue
- Work Zone

T - Truck
M - Motorcycle
P - Passenger
A - ATV
R - Tractor
E - Equipment
B -Bicycle
L -Railway

3 crashes not placed

01/06/20 18:20 D 2000159	01/11/20 21:15 S 2000328	01/14/20 19:20 D 2000845	01/21/20 14:55 S 2000855	03/24/20 21:27 D 2003922
04/16/20 21:50 D 2004491	04/25/20 21:00 D 2004975	06/14/20 02:00 D 2006664	06/29/20 15:02 D 2007632	07/02/20 21:54 D 2007496
08/10/20 22:30 D 2009651	10/25/20 11:47 S 2013727	10/26/20 20:20 D 2013341	11/20/20 18:06 D 2015218	12/13/20 00:20 D 2017786
03/01/21 02:30 S 2104069	04/27/21 13:20 D 2105756	04/22/20 13:05 D 2004840	05/17/20 16:01 D 2005599	11/08/20 17:5 D 2014234
11/25/20 12:35 D 2016130	12/23/20 11:18 S 2017346	12/23/20 14:30 S 2017543	05/02/21 21:20 D 2108991	05/05/21 16:25 D 2105762

11/03/20 17:55 D 2014574	12/08/20 17:50 D 2016842	12/08/20 19:55 D 2016132	01/07/21 20:10 D 2100257	02/23/21 06:30 D 2102390
05/07/21 01:10 D 2105821	07/20/21 06:20 D 2109553	10/14/21 06:27 D 2114264	10/14/21 07:08 D 2114265	10/28/21 07:21 D 2115394
11/15/21 18:42 D 2116833	12/08/21 18:59 D 2118211	02/03/22 08:20 D 2201438	04/23/22 14:00 D 2204795	05/15/22 04:28 D 2205660
12/04/20 18:40 D 2016246	02/17/21 07:50 S 2102271	03/16/21 15:38 W 2103917	07/31/21 15:44 D 2110772	09/01/21 15:3 D 2112971
10/28/21 09:46 D 2115369	12/15/21 08:20 W 2119748	12/30/21 18:22 D 2120005	05/09/22 15:37 1 D 2205551	06/10/22 17:3 D 2207407

- Vehicle Path
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- Fatigue
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T - Truck
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A - ATV
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E - Equipment
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L -Railway

P 06/16/21 21:14 D 2108380	P 06/22/21 23:30 D 2108381	P 09/30/21 22:10 W 2113360	P 10/02/21 19:36 D 2113713	P 11/19/21 19:00 D 2117105
P 12/03/21 18:23 D 2118113	P 12/13/21 21:00 D 2118493	P 06/08/22 18:14 D 2206805	P 06/12/22 10:44 D 2207577	P P 01/28/22 10:45 D 2201188
P ? 03/29/22 11:59 D 2203956	P M 07/10/22 00:00 D 2209058	P P 10/23/22 23:52 D 2214125	P P 12/05/22 17:26 D 2217070	P A 12/17/22 18:36 S 2218937

P 06/10/22 22:38 D 2207330	P 07/05/22 18:40 D 2208451	P 08/30/22 20:08 D 2211257	P 09/12/22 20:41 D 2211639	P 09/26/22 01:25 D 2212353
P 10/05/22 06:56 W 2212972	P 10/28/22 21:30 D 2215500	P 11/05/22 20:54 D 2214953	P 11/13/22 19:32 D 2215381	P P 08/16/22 13:33 D 2210607
P P 12/22/22 14:40 S 2219025				

- Vehicle Path
- Parked Vehicle
- Backing Vehicle
- Rear End
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- Sideswipe
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- D - Dry
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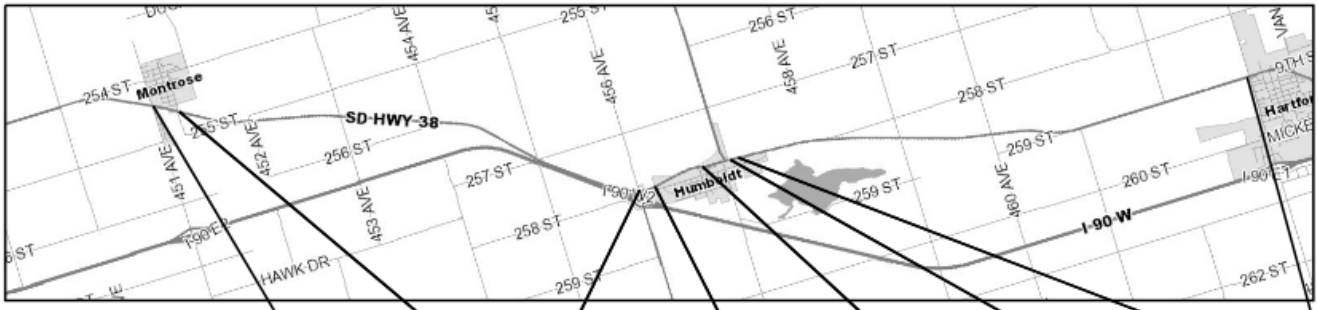
HIGHWAY 038
Beginning MRM = 342.66
Ending MRM = 350.04

RURAL

HIGHWAY 038
Beginning MRM = 342.66
Ending MRM = 350.04

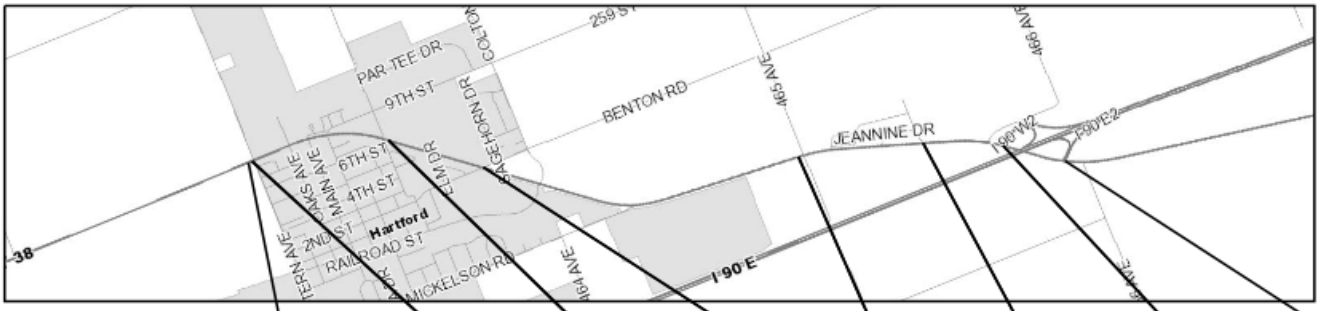


IDENTIFICATION							
Federal Aid System	STP	STP	STP	STP	STP	STP	STP
Funding Category	MUNI	SEC	MINA	MUNI	MUNI	SEC	SEC
Functional Classification	R-MA C	R-MA C	R-MI A	R-MI A	R-MI A	R-MA C	R-MA C
Direction							
Beginning MRM	342.66	343.05	348.91	349.07	349.63	350.04	350.04
MRM Displacement	0.000	0.011	0.000	0.006	0.039	0.000	0.095
Segment Length	0.341	5.896	0.183	0.590	0.331	0.095	5.979
Year Built	1948	1948	1989	1989	1948	1948	1948
Year Last Improved	2006	2006	2012	2012	2012	2012	2012
Year Last Sealed	2015	2015	2014	2014	2014	2014	2014
ROADWAY CONDITIONS							
Surface Condition Index	3.60	3.66	4.27	4.30	4.30	4.30	4.37
Roughness Index	3.83 (19)	3.87 (19)	4.27 (19)	4.54 (19)	4.11 (19)	4.54 (19)	4.67 (19)
ASPHALT INDEX VALUES							
Transverse Cracking	3.96 (19)	4.16 (19)	4.67 (19)	4.50 (19)	4.50 (19)	4.50 (19)	4.69 (19)
Fatigue Cracking	4.60 (19)	4.41 (19)	4.37 (19)	4.71 (19)	4.60 (19)	4.60 (19)	4.68 (19)
Patching/Patch Deterioration	5.00 (19)	5.00 (19)	5.00 (19)	5.00 (19)	5.00 (19)	5.00 (19)	5.00 (19)
Block Cracking	3.52 (19)	3.65 (19)	4.30 (19)	4.30 (19)	4.30 (19)	4.30 (19)	4.25 (19)
Rut Index	4.52 (19)	4.41 (19)	4.38 (19)	4.55 (19)	4.63 (19)	4.61 (19)	4.69 (19)
Rut Depth(Inches) AVG/MAX	0.10 / 0.20	0.20 / 0.70	0.20 / 0.40	0.10 / 0.20	0.10 / 0.20	0.10 / 0.10	0.10 / 0.20
CONCRETE INDEX VALUES							
D-Cracking/ASR							
Joint Spalling							
Corner Cracking							
Faulting / CRCP Block Cracking							
Joint Seal Damage							
Punchouts							
STRUCTURAL DESCRIPTION							
Surface Type	AONC	AONC	THK	THK	AONC	AONC	AONC
Shoulder Type - Primary/Secondary	AC/N/D	AC/N/D	AC/N/D	AC/N/D	AC/N/D	AC/N/D	AC/N/D
Surface Width	24 (024)	24 (024)	24 (024)	24 (024)	24 (024)	24 (024)	24 (024)
Left Shoulder Width-Prim/Sec	4 (04) / 0 (0)	4 (04) / 0 (0)	6 (06) / 0 (0)	6 (06) / 0 (0)	6 (06) / 0 (0)	6 (06) / 0 (0)	5 (05) / 0 (0)
Right Shoulder Width-Prim/Sec	4 (04) / 0 (0)	4 (04) / 0 (0)	6 (06) / 0 (0)	6 (06) / 0 (0)	6 (06) / 0 (0)	6 (06) / 0 (0)	5 (05) / 0 (0)
Widths-RDWY/ROW-Predom/Min	032/132/132	032/132/132	036/132/126	036/126/100	036/100/100	036/132/132	034/132/132
Roadbed Layer 1	2015/TS3/0.4	2015/TS3/0.4	2016/TC/0.0	2016/TC/0.0	2016/TC/0.0	2016/TC/0.0	2016/TC/0.0
Roadbed Layer 2	2008/TS3/0.4	2008/TS3/0.4	2014/TS3/0.4	2014/TS3/0.4	2014/TS3/0.4	2014/TS3/0.4	2014/TS3/0.4
Roadbed Layer 3	2008/TC/0.0	2008/TC/0.0	2013/TC/0.0	2013/TC/0.0	2013/TC/0.0	2013/TC/0.0	2013/TC/0.0
Roadbed Layer 4	2006/AL3/2.0	2006/AL3/2.0	2012/AJ3/2.0	2012/AJ3/2.0	2012/AJ3/2.0	2012/AJ3/2.0	2012/AJ3/2.0
Roadbed Layer 5	1985/AD3/2.5	1985/AD3/2.5	1989/AG3/4.0	1989/AG3/4.0	1989/AG3/1.0	1989/AG3/1.0	1987/AD3/2.5
Roadbed Layer 6	1985/CS/0.0	1985/CS/0.0	1989/BU5/16.0	1989/BU5/16.0	1989/AG3/2.0	1989/AG3/2.0	1948/CP1/6.0
Roadbed Layer 7	1948/CP1/9.0	1948/CP1/9.0			1948/CP1/9.0	1948/CP1/9.0	1948/BU1/6.0
Roadbed Layer 8	1948/BU1/6.0	1948/BU1/6.0			1948/BU1/6.0	1948/BU1/6.0	
Roadbed Layer 9							
Roadbed Layer 10							
Roadbed Layer 11							
Roadbed Layer 12							
Number Of Structures	0	1	0	0	0	0	0
Number Of Box Culverts	1	0	0	0	0	0	0
3 YR AVG MAINTENANCE COSTS							
Mainline	$2208	$2208	$2475	$2473	$2474	$2474	$153
Shoulders	$164	$163	$257	$258	$257	$253	$68
Structure	$53	$53	$0	$0	$0	$0	$0
Other	$3821	$3821	$15557	$15559	$15559	$15558	$6963
Total	$6246	$6245	$18290	$18290	$18290	$18295	$7184
Total 3 Year Main Contract Amount	$129	$128	$1863	$1863	$1861	$1863	$735
TRAFFIC							
Current ADT	1029	1545	2302	2302	2269	2116	2116
Projected 20 Year ADT	1338	2008	3513	3513	3463	3229	3229
Number Of Trucks	111	148	134	134	132	121	121
CRASHES							
Weighted Crash Rate	4.26	1.74	1.19	0.48	0.48	0.26	1.86
Number of Fatal	0	0	0	0	0	0	0
Number Of Injury	1	1	0	0	0	0	6
Number Of Property Damage	5	26	5	2	2	1	25
MAINLINE IMPROVEMENTS							
Project Programmed	YES	YES	YES	YES	YES	YES	YES
PCN	05UR	05UR	07K4	07K4	07K4	07K4	07K4
Improvement Type	MILL AC OVLY	MILL AC OVLY	CHIP SEAL	CHIP SEAL	CHIP SEAL	CHIP SEAL	CHIP SEAL
Estimated Improvement Cost	$91	$1571	$6	$18	$10	$3	$181
Improvement Year	2023	2023	2021	2022	2022	2021	2021
PCN							
Improvement Type	ROUTE/SEAL	ROUTE/SEAL	COLD IP RCYL	MILL AC OVLY	COLD IP RCYL	COLD IP RCYL	COLD IP RCYL
Estimated Improvement Cost	$3	$1571	$6	$376	$138	$3	$181
Improvement Year	2025	2025	2026	2030	2027	2028	2028

HIGHWAY 038
Beginning MRM = 356.00
Ending MRM = 359.27

RURAL

HIGHWAY 038
Beginning MRM = 356.00
Ending MRM = 359.27

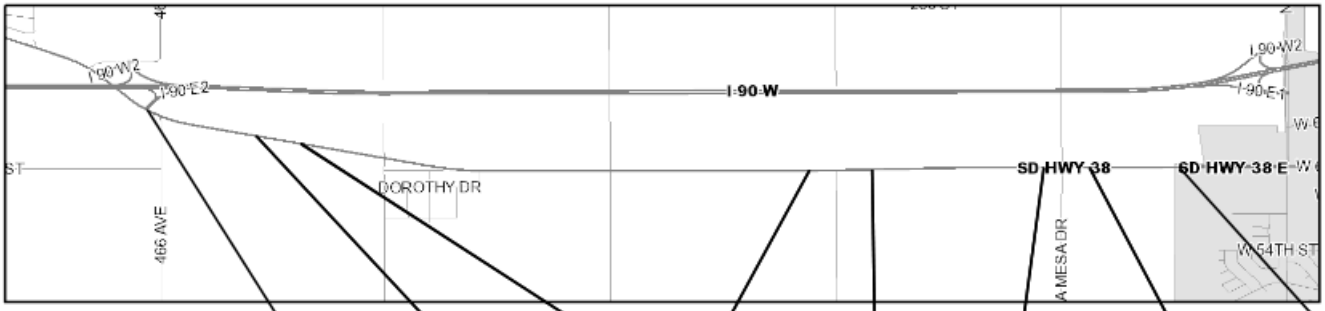


IDENTIFICATION							
Federal Aid System	STP	STP	STP	STP	STP	STP	STP
Funding Category	SEC	MUNI	MUNI	SEC	SEC	SEC	MINA
Functional Classification	R-MA C	R-MA C	R-MA C	R-MA C	R-MA C	R-MA C	R-MI A
Direction							
Beginning MRM	356.00	356.00	356.69	357.17	358.00	359.00	359.27
MRM Displacement	0.120	0.135	0.018	0.000	0.537	0.051	0.000
Segment Length	0.015	0.581	0.449	1.369	0.507	0.337	0.286
Year Built	1994	1994	1950	1950	1950	1950	1950
Year Last Improved	1994	1994	2012	2012	2012	2012	2012
Year Last Sealed			2014	2014	2014	2014	2014
ROADWAY CONDITIONS							
Surface Condition Index	1.42	1.40	4.30	4.43	3.99	4.32	4.46
Roughness Index	2.72 (19)	3.50 (19)	4.76 (19)	4.79 (19)	4.50 (19)	4.70 (19)	4.60 (19)
ASPHALT INDEX VALUES							
Transverse Cracking			4.50 (19)	4.51 (19)	4.63 (19)	4.50 (19)	4.50 (19)
Fatigue Cracking			5.00 (19)	4.78 (19)	4.96 (19)	4.60 (19)	4.60 (19)
Patching/Patch Deterioration			5.00 (19)	5.00 (19)	5.00 (19)	5.00 (19)	5.00 (19)
Block Cracking			4.30 (19)	4.43 (19)	4.30 (19)	4.30 (19)	4.73 (19)
Rut Index			4.65 (19)	4.55 (19)	3.84 (19)	4.54 (19)	4.46 (19)
Rut Depth(Inches) AVG/MAX			0.10 / 0.20	0.10 / 0.90	0.30 / 0.70	0.10 / 0.30	0.20 / 0.60
CONCRETE INDEX VALUES							
D-Cracking/ASR	5.00 (19)	5.00 (19)					
Joint Spalling	1.40 (19)	1.40 (19)					
Corner Cracking	4.20 (19)	4.68 (19)					
Faulting / CRCP Block Cracking	4.41 (19)	4.62 (19)					
Joint Seal Damage	1.40 (19)	1.40 (19)					
Punchouts	5.00 (19)	5.00 (19)					
STRUCTURAL DESCRIPTION							
Surface Type	TKSJD	TKSJD	AONC	AONC	AONC	AONC	AONC
Shoulder Type - Primary/Secondary	PCCP/N/D	C & G/N/D	AC/GRVL	AC/GRVL	AC/GRVL	AC/GRVL	AC/GRVL
Surface Width	36 (036)	52 (052)	24 (024)	24 (024)	36 (036)	24 (024)	36 (036)
Left Shoulder Width-Prim/Sec	11 (11) / 0 (0)	2 (02) / 0 (0)	5 (05) / 3 (3)	5 (05) / 3 (3)	5 (05) / 3 (3)	5 (05) / 3 (3)	5 (05) / 3 (3)
Right Shoulder Width-Prim/Sec	11 (11) / 0 (0)	2 (02) / 0 (0)	5 (05) / 3 (3)	5 (05) / 3 (3)	5 (05) / 3 (3)	5 (05) / 3 (3)	5 (05) / 3 (3)
Widths-RDWY/ROW-Predom/Min	058/150/150	056/150/150	040/150/150	040/150/150	052/150/150	040/150/150	052/150/150
Roadbed Layer 1	1994/CD1/8.0	1994/CD1/8.0	2016/TC/0.0	2016/TC/0.0	2016/TC/0.0	2016/TC/0.0	2016/TC/0.0
Roadbed Layer 2	1994/BU3/5.0	1994/BU3/5.0	2014/TS3/0.4	2014/TS3/0.4	2014/TS3/0.4	2014/TS3/0.4	2014/TS3/0.4
Roadbed Layer 3			2013/TC/0.0	2013/TC/0.0	2013/TC/0.0	2013/TC/0.0	2013/TC/0.0
Roadbed Layer 4			2012/AJ3/2.0	2012/AJ3/2.0	2012/AJ3/2.0	2012/AJ3/2.0	2012/AJ3/2.0
Roadbed Layer 5			1992/AG5/0.5	1992/AG5/0.5	1992/AG5/0.5	1992/AG5/0.5	1992/AG5/0.5
Roadbed Layer 6			1992/AG5/3.0	1992/AG5/3.0	1992/AG5/3.0	1992/AG5/3.0	1992/AG5/3.0
Roadbed Layer 7			1950/CP1/8.0	1950/CP1/8.0	1950/CP1/8.0	1950/CP1/8.0	1950/CP1/8.0
Roadbed Layer 8			1950/BU1/6.0	1950/BU1/6.0	1950/BU1/6.0	1950/BU1/6.0	1950/BU1/6.0
Roadbed Layer 9							
Roadbed Layer 10							
Roadbed Layer 11							
Roadbed Layer 12							
Number Of Structures	0	0	0	0	0	0	0
Number Of Box Culverts	0	0	0	0	0	1	0
3 YR AVG MAINTENANCE COSTS							
Mainline	$200	$210	$267	$267	$266	$267	$266
Shoulders	$133	$115	$73	$73	$73	$74	$73
Structure	$0	$0	$82	$83	$83	$83	$84
Other	$11333	$11313	$8967	$8967	$8966	$8967	$8969
Total	$11667	$11639	$9390	$9390	$9391	$9389	$9392
Total 3 Year Main Contract Amount	$1467	$1466	$6383	$6382	$6383	$6383	$6381
TRAFFIC							
Current ADT	2116	3505	3532	4275	4275	4275	4151
Projected 20 Year ADT	3229	5349	5390	6524	6524	6524	6335
Number Of Trucks	121	102	102	107	107	107	98
CRASHES							
Weighted Crash Rate	0.00	1.88	0.31	1.97	0.39	1.67	0.40
Number of Fatal	0	0	0	0	0	0	0
Number Of Injury	0	2	0	3	0	3	1
Number Of Property Damage	0	6	2	12	3	4	0
MAINLINE IMPROVEMENTS							
Project Programmed	YES	YES	YES	YES	YES	YES	YES
PCN	06Y9	06Y9	07K4	07K4	07K4	07K4	07K4
Improvement Type	PAV RESTORE1	PAV RESTORE1	CHIP SEAL	CHIP SEAL	CHIP SEAL	CHIP SEAL	CHIP SEAL
Estimated Improvement Cost	$1	$27	$13	$41	$15	$10	$9
Improvement Year	2021	2021	2023	2021	2021	2021	2021
PCN							
Improvement Type	CRK SEAT ACO	SEAL JNTS	COLD IP RCYL	COLD IP RCYL	MILL AC OVLY	COLD IP RCYL	COLD IP RCYL
Estimated Improvement Cost	$1	$31	$187	$41	$15	$10	$9
Improvement Year	2032	2032	2029	2028	2029	2028	2028

HIGHWAY 038
Beginning MRM = 359.63
Ending MRM = 363.85

RURAL

HIGHWAY 038
Beginning MRM = 359.63
Ending MRM = 363.85



IDENTIFICATION							
Federal Aid System	STP	STP	STP	STP	STP	STP	STP
Funding Category	MINA	MINA	MINA	MINA	MINA	MINA	MINA
Functional Classification	R-MI A	R-MI A	R-MI A	R-MI A	R-MI A	R-MI A	R-MI A
Direction							
Beginning MRM	359.63	360.00	360.22	362.45	362.75	363.00	363.85
MRM Displacement	0.000	0.138	0.114	0.156	0.156	0.652	0.000
Segment Length	0.512	0.203	2.276	0.278	0.753	0.211	0.396
Year Built	1950	1986	1950	1950	1950	1950	1950
Year Last Improved	2012	1986	2012	2012	2012	2012	2012
Year Last Sealed	2014		2014	2014	2014	2014	2014
ROADWAY CONDITIONS							
Surface Condition Index	4.29	0.39	4.35	4.04	4.23	4.03	4.23
Roughness Index	4.72 (19)	0.39 (19)	4.84 (19)	4.63 (19)	4.72 (19)	4.31 (19)	4.62 (19)
ASPHALT INDEX VALUES							
Transverse Cracking	4.50 (19)		4.50 (19)	4.50 (19)	4.50 (19)	4.66 (19)	4.60 (19)
Fatigue Cracking	4.84 (19)		4.82 (19)	4.60 (19)	4.52 (19)	4.41 (19)	4.87 (19)
Patching/Patch Deterioration	5.00 (19)		5.00 (19)	5.00 (19)	5.00 (19)	5.00 (19)	5.00 (19)
Block Cracking	4.19 (19)		4.30 (19)	4.04 (19)	4.23 (19)	4.03 (19)	4.13 (19)
Rut Index	4.63 (19)		4.58 (19)	4.12 (19)	4.27 (19)	4.13 (19)	4.44 (19)
Rut Depth(Inches) AVG/MAX	0.10 / 0.60		0.10 / 0.40	0.20 / 0.60	0.20 / 0.60	0.20 / 0.70	0.20 / 0.70
CONCRETE INDEX VALUES							
D-Cracking/ASR		5.00 (19)					
Joint Spalling		2.30 (19)					
Corner Cracking		5.00 (19)					
Faulting / CRCP Block Cracking		3.06 (19)					
Joint Seal Damage		2.30 (19)					
Punchouts		5.00 (19)					
STRUCTURAL DESCRIPTION							
Surface Type	AONC	TKSJ	AONC	AONC	AONC	AONC	AONC
Shoulder Type - Primary/Secondary	AC/GRVL	PCCP/AC	AC/GRVL	AC/GRVL	AC/GRVL	AC/GRVL	AC/GRVL
Surface Width	24 (024)	24 (024)	24 (024)	36 (036)	24 (024)	36 (036)	24 (024)
Left Shoulder Width-Prim/Sec	5 (05) / 3 (3)	3 (03) / 5 (5)	4 (04) / 4 (4)	4 (04) / 4 (4)	4 (04) / 4 (4)	4 (04) / 4 (4)	4 (04) / 4 (4)
Right Shoulder Width-Prim/Sec	5 (05) / 3 (3)	3 (03) / 5 (5)	4 (04) / 4 (4)	4 (04) / 4 (4)	4 (04) / 4 (4)	4 (04) / 4 (4)	4 (04) / 4 (4)
Widths-RDWY/ROW-Predom/Min	040/150/150	040/150/150	040/150/150	052/150/150	040/157/150	052/157/157	040/157/157
Roadbed Layer 1	2016/TC/0.0	1986/CP1/8.0	2016/TC/0.0	2016/TC/0.0	2016/TC/0.0	2016/TC/0.0	2016/TC/0.0
Roadbed Layer 2	2014/TS3/0.4	1986/BU5/6.0	2014/TS3/0.4	2014/TS3/0.4	2014/TS3/0.4	2014/TS3/0.4	2014/TS3/0.4
Roadbed Layer 3	2013/TC/0.0		2013/TC/0.0	2013/TC/0.0	2013/TC/0.0	2013/TC/0.0	2013/TC/0.0
Roadbed Layer 4	2012/AJ3/2.0		2012/AJ3/2.0	2012/AJ3/2.0	2012/AJ3/2.0	2012/AJ3/2.0	2012/AJ3/2.0
Roadbed Layer 5	1992/AG5/0.5		1993/AG5/3.5	1993/AG5/3.5	1993/AG5/3.5	1993/AG5/3.5	1993/AG5/3.5
Roadbed Layer 6	1992/AG5/3.0		1950/CP1/8.0	1950/CP1/8.0	1950/CP1/8.0	1950/CP1/8.0	1950/CP1/8.0
Roadbed Layer 7	1950/CP1/8.0		1950/BU1/6.0	1950/BU1/6.0	1950/BU1/6.0	1950/BU1/6.0	1950/BU1/6.0
Roadbed Layer 8	1950/BU1/6.0						
Roadbed Layer 9							
Roadbed Layer 10							
Roadbed Layer 11							
Roadbed Layer 12							
Number Of Structures	0	1	0	0	0	0	0
Number Of Box Culverts	0	0	1	0	1	1	0
3 YR AVG MAINTENANCE COSTS							
Mainline	$268	$635	$109	$108	$109	$109	$109
Shoulders	$72	$340	$71	$72	$70	$71	$71
Structure	$82	$394	$360	$360	$360	$360	$359
Other	$8967	$33261	$6959	$6957	$6959	$6957	$6960
Total	$9391	$34631	$7498	$7496	$7498	$7498	$7497
Total 3 Year Main Contract Amount	$6383	$3729	$774	$773	$774	$773	$773
TRAFFIC							
Current ADT	4104	4104	4104	4784	5316	5316	5316
Projected 20 Year ADT	6263	6263	6263	7301	8112	8112	8112
Number Of Trucks	94	94	94	113	128	128	128
CRASHES							
Weighted Crash Rate	1.20	0.53	1.06	0.34	0.21	0.31	0.83
Number of Fatal	0	0	0	0	0	0	0
Number Of Injury	2	1	2	0	0	1	1
Number Of Property Damage	3	1	12	3	2	0	5
MAINLINE IMPROVEMENTS							
Project Programmed	YES	YES	YES	YES	YES	YES	YES
PCN	07K4	06Y9	07K4	07K4	07K4	07K4	07K4
Improvement Type	CHIP SEAL	PAV RESTORE1	CHIP SEAL	CHIP SEAL	CHIP SEAL	CHIP SEAL	CHIP SEAL
Estimated Improvement Cost	$15	$10	$69	$8	$23	$6	$12
Improvement Year	2021	2021	2021	2021	2021	2021	2021
PCN							
Improvement Type	COLD IP RCYL	PCCP RESURF	COLD IP RCYL	MILL AC OVLY	COLD IP RCYL	COLD IP RCYL	COLD IP RCYL
Estimated Improvement Cost	$15	$10	$69	$8	$23	$6	$12
Improvement Year	2028	2034	2028	2029	2027	2026	2028

SD38 Corridor Study

To:	Steve Gramm, SDDOT
From:	Chase Cutler, PE, PTOE / Ben White, PE
Subject:	SD Highway 38 – Future No-Build Traffic Operations and Safety Analysis
Date:	January 16, 2024

Introduction

The South Dakota Department of Transportation (SDDOT), City of Hartford, Town of Humboldt, City of Sioux Falls, Sioux Falls Metropolitan Planning Organization (MPO), Minnehaha County, and Federal Highway Administration (FHWA) initiated an assessment of approximately 14.2 miles of the SD Highway 38 (SD 38) corridor from the SD Highway 19 intersection in Humboldt, South Dakota to the Marion Road intersection in Sioux Falls, South Dakota. The study segment of SD 38 is predominantly a rural two-lane highway and located in a rapidly developing area and serves as a viable alternate route to Interstate-90. Development pressure is expected to impact the SD 38 corridor with higher traffic volumes, greater demand for multi-modal (bike and pedestrian) uses, and additional access management concerns.

Segments of the SD 38 corridor are expected to need major rehabilitation or reconstruction within the next 10 to 15 years. Primary concerns of this study are to ensure the roadway is reconstructed to meet future traffic volume demands.

The purpose of this technical memorandum is to document the future no-build traffic assessment in support of the study being completed along SD 38. This technical report will provide a future year conditions assessment of the two-lane highway and at each of the study intersections. **Table 1** depicts the eighteen study intersections reviewed as part of the existing conditions assessment and traffic data review.

TABLE 1: SD 38 STUDY INTERSECTIONS

Main Line	Cross Street(s)
SD Highway 38	SD Highway 19 / 457th Avenue
SD Highway 38	459th Avenue
SD Highway 38	I-90 Speedway Entrance
SD Highway 38	Western Avenue / 463rd Avenue
SD Highway 38	Main Avenue
SD Highway 38	Vandemark Avenue
SD Highway 38	2nd Street
SD Highway 38	West Central High School Entrance
SD Highway 38	Railroad Street / 464th Avenue
SD Highway 38	Mickelson Road/260th Street
SD Highway 38	466th Avenue (North)
SD Highway 38	WB I-90 Exit 390
SD Highway 38	EB I-90 Exit 390
SD Highway 38	466th Avenue (South)
SD Highway 38	County Highway 141 / 468th Avenue
SD Highway 38	County Highway 139 / 469th Avenue
SD Highway 38	La Mesa Drive / 470th Avenue
SD Highway 38	Marion Road

Existing Traffic Data

The existing traffic volume data for the SD 38 corridor was developed from 12-hour count data collected on November 2, 2022, for 17 intersections. Event traffic data for the I-90 Speedway intersection was developed from 14-hour count data collected on May 27th, 2023 at the intersection of SD 38 & the I-90 Speedway Entrance. The count data included turning movements by approach in 15-minute intervals with composition of passenger vehicles and trucks. Review of the traffic volume data revealed the peak hour periods occurred between 7:15-8:15 AM and 4:45-5:45 PM. The daily traffic data was provided by SDDOT.

Traffic Forecast Methodology

In order to evaluate the existing infrastructure under future traffic conditions, the 2050 ADT volumes were collected from the Sioux Falls Metropolitan Planning Organization (SFMPO) Travel Demand Model (TDM). These forecasted volumes account for localized traffic growth, changes in traffic patterns, and any planned roadway improvements. To determine the traffic growth within the study area and estimate 2050 peak hour volumes, the 2018 base year ADT was referenced from the TDM. Additionally, the future year ADT was acquired from available SDDOT GIS data to account for portions of SD 38 that were outside the TDM boundaries. Available development site plans were sourced and any planned development trips that had not been included in the TDM were incorporated into the future year forecasted volumes.

The growth calculated from the ADT values were used to develop 2050 design year morning (AM) and afternoon (PM) peak hour volumes at study intersections. The peak hour volumes will be used for the traffic analysis to assess the level of operations for intersections within the study area.

Additional traffic characteristics such as the heavy vehicle percentages were established during the existing year traffic forecast development. The values established under existing year traffic are anticipated to remain relatively consistent through the future year traffic condition and were used during the 2050 design year analysis.

To develop the interim year traffic conditions, straight-line growth rates between the existing year ADT volumes and the estimated 2050 ADT volumes were calculated and the interim year traffic volumes were interpolated. Interim year 2029 and 2040 traffic forecasts were developed.

The estimated interim year 2029 and 2040 morning (AM) and afternoon (PM) peak hour volumes were developed by process of interpolation using straight-line growth assumptions based on the existing year and future year 2050 traffic volumes. The peak hour volumes were used for the traffic analysis to assess the level of operations for intersections and highway segments within the study area.

Traffic Operations Methodology

Intersection level of service (LOS) is primarily a function of peak hour turning movement volumes, intersection lane configuration, and traffic control. For intersection analysis, the Highway Capacity Manual (HCM) defines LOS in terms of the average control delay at the intersection in seconds per vehicle. The results of a HCM analysis are typically presented in the form of a letter grade (A-F) that provides a qualitative estimate of the operational efficiency or effectiveness of the corridor. Much like an academic report card, LOS A represents the best range of operating conditions (i.e., motorists experiencing little delay or congestion) and LOS F represents the worst (i.e., extreme delay or severe congestion).

Table 2 defines the control delay range corresponding to each LOS for unsignalized and signalized intersection locations. At intersections, LOS E is considered to be at capacity and typically represents a scenario in which significant queuing is present or traffic signal cycle failure is evident. For unsignalized intersections, the intersection LOS is given by the worst approach LOS. For instance, an intersection with LOS D on one approach and LOS B on the rest would result in LOS D for the intersection.

TABLE 2: LEVEL OF SERVICE FOR CONTROL DELAY (INTERSECTIONS)

Level Of Service	Unsignalized	Traffic Signal
	Control Delay (sec/veh)	Control Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 and ≤ 15	> 10 and ≤ 20
C	> 15 and ≤ 25	> 20 and ≤ 35
D	> 25 and ≤ 35	> 35 and ≤ 55
E	> 35 and ≤ 50	> 55 and ≤ 80
F	> 50	> 80

Source: Highway Capacity Manual, 7th Edition.

Following SDDOT guidance, LOS C is the desired minimum traffic operational goal for intersections in rural environments while LOS D is an acceptable operational goal for intersections in dense urban environments. The intersections within the study area have a desired traffic operational goal of LOS C.

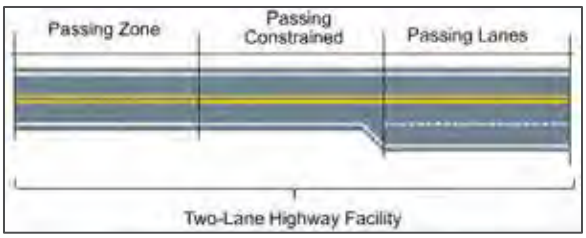
Table 3 defines the follower density range corresponding to each LOS for two-lane highway segments. On two-lane highways, LOS E is considered to be at capacity. For two-lane highway segments, a LOS B would represent a scenario where some platooning is present with the potential passing demand and passing opportunities balanced while a LOS D would represent a scenario where significant platooning is present and passing demand far exceeds passing opportunities.

TABLE 3: LEVEL OF SERVICE FOR FOLLOWER DENSITY (TWO-LANE HIGHWAYS)

Level Of Service	Speed ≥ 50 mph	Speed < 50 mph
	Follower Density (followers/mi/ln)	Follower Density (followers/mi/ln)
A	≤ 2.0	≤ 2.5
B	> 2.0 - 4.0	> 2.5 – 5.0
C	> 4.0 – 8.0	> 5.0 – 10.0
D	> 8.0 – 12.0	> 10.0 – 15.0
E	> 12.0	> 15.0
F	Demand exceeds capacity	

Source: Highway Capacity Manual, 7th Edition.

Following SDDOT guidance, LOS C is the desired traffic operational goal for highways in rural environments (functional classification of collector) and LOS D is considered the minimal acceptable operations for highways in urban environments (functional classification of minor arterial). The SD 38 highway segments within the study area are categorized as rural with federal functional classification of collector between Humboldt to Hartford and categorized as urban with federal functional classification of minor arterial between Hartford to Sioux Falls. The two-lane highway segments within the study area have a desired traffic operational goal of LOS C.



The highway was segmented according to the two-lane highway methodology presented in chapter 15 of HCM7, with segment breaks reflecting the passing zones. The segmentation for analysis can be seen in the Appendix.

The following analysis years/scenarios were evaluated for traffic operational analysis:

- Opening year 2029 No-Build.
- Interim year 2040 No-Build.
- Design year 2050 No-Build.

Operational analysis was completed for the AM and PM peak hour periods of each scenario.

Future Traffic Operations

Traffic operations analysis for the study area intersections included capacity evaluation using the Highway Capacity Manual (HCM) 7th Edition techniques thru use of the Highway Capacity Software (HCS) 2022. Output reports from the HCS2022 software are available in the Appendix.

Traffic operations analysis for the study area SD Highway 38 corridor included capacity evaluation using the Highway Capacity Manual (HCM) 7th Edition techniques through use of the Highway Capacity Software (HCS) 2022. The two-lane highway traffic operations analysis used existing highway geometry with planned improvements, future year traffic volumes and posted travel speeds. Planned improvements to the SD 38 corridor include the construction of eastbound and westbound left turn lanes at the SD 38 & 459th Avenue intersection as well as roadway widening of the SD 38 corridor between Railroad Street/ 464th Avenue to 465th Street to a three-lane cross section with center two-way left turn lane.

Output reports from the HCS2022 software are available in the Appendix.

Opening Year 2029

Opening Year 2029 traffic operations analysis used existing intersection geometry with planned improvements, future year traffic volumes and posted travel speeds. The results of the Opening Year 2029 intersection capacity analysis can be seen in **Figure 1** and **Table 4** below.

TABLE 4: HCM TRAFFIC INTERSECTION OPERATIONS – OPENING 2029

ID #	SD Hwy 38 Cross Street(s)	Intersection Control	AM PEAK HOUR		PM PEAK HOUR	
			Delay	LOS	Delay	LOS
1	SD Highway 19 / 457th Avenue	TWSC	10.4	B	10.5	B
2	459th Avenue	TWSC	10.4	B	11.8	B
3	I-90 Speedway Entrance	TWSC	0.0	A	0.0	A
4	Western Avenue / 463rd Avenue	TWSC	13.5	B	16.5	C
5	Main Avenue	TWSC	12.0	B	15.2	C
6	Vandemark Avenue	TWSC	12.6	B	12.7	B
7	2nd Street	TWSC	16.6	C	18.5	C
8	West Central High School Entrance	TWSC	12.1	B	12.0	B
9	Railroad Street / 464th Avenue	TWSC	18.2	C	19.8	C
10	Mickelson Road / 260th Street	TWSC	24.8	C	54.5	F
11	466th Avenue (North)	TWSC	19.5	C	20.3	C
12	WB I-90 Exit 390	TWSC	11.5	B	17.7	C
13	EB I-90 Exit 390	TWSC	12.3	B	15.4	C
14	466th Avenue (South)	TWSC	11.9	B	12.3	B
15	County Highway 141 / 468th Avenue	TWSC	13.5	B	14.5	B
16	County Highway 139 / 469th Avenue	TWSC	14.2	B	18.5	C
17	La Mesa Drive / 470th Avenue	TWSC	17.0	C	21.7	C
18	Marion Road	Signal	16.2	B	20.6	C

Notes: Bold/Highlighted indicates a poor LOS

Under the Opening Year 2029 conditions, the traffic operations analysis showed acceptable operations at the majority of intersections within the study area, with intersections achieving LOS C or greater during both the AM and PM peak hours. The SD 38 & Mickelson Road/260th Street intersection which produced a LOS F during the PM peak hour which can be attributed to the additional development traffic demand at this intersection.

The results of the two-lane highway capacity analysis can be seen in **Table 5** and **Table 6**.

TABLE 5: HCM TRAFFIC HIGHWAY OPERATIONS – OPENING 2029, EASTBOUND SD 38

ID #	Segment Type	AM PEAK HOUR		PM PEAK HOUR	
		Density	LOS	Density	LOS
SD Highway 38 Eastbound					
EB 1	Passing Zone	0.6	A	0.2	A
EB 2	Passing Constrained	0.7	A	0.3	A
EB 3	Passing Zone	0.5	A	0.2	A
EB 4	Passing Constrained	0.7	A	0.3	A
EB 5	Passing Zone	0.5	A	0.2	A
EB 6	Passing Constrained	0.7	A	0.3	A
EB 7	Passing Zone	0.6	A	0.2	A
EB 8	Passing Zone	0.5	A	0.2	A
EB 9	Passing Constrained	0.7	A	0.3	A
EB 10	Passing Zone	0.5	A	0.2	A
EB 11	Passing Zone	0.6	A	0.3	A
EB 12	Passing Constrained	0.7	A	0.4	A
EB 13	Passing Zone	0.6	A	0.3	A
EB 14	Passing Constrained	1.3	A	0.7	A
EB 15	Passing Zone	3.7	B	1.8	A
EB 16	Passing Constrained	4.1	C	1.9	A
EB 17	Passing Zone	3.7	B	1.8	A
EB 18	Passing Zone	3.6	B	1.3	A
EB 19	Passing Constrained	3.6	B	1.3	A
EB 20	Passing Constrained	3.8	B	1.4	A
EB 21	Passing Constrained	4.0	C	1.7	A
EB 22	Passing Constrained	1.2	A	1.0	A
EB 23	Passing Constrained	1.3	A	1.0	A
EB 24	Passing Zone	1.1	A	0.9	A
EB 25	Passing Constrained	1.2	A	1.0	A
EB 26	Passing Zone	1.1	A	0.8	A
EB 27	Passing Constrained	1.3	A	1.0	A
EB 28	Passing Zone	1.1	A	0.9	A
EB 29	Passing Zone	1.5	A	1.2	A
EB 30	Passing Constrained	1.6	A	1.3	A
EB 31	Passing Zone	1.4	A	1.2	A
EB 32	Passing Constrained	1.6	A	1.3	A
EB 33	Passing Constrained	4.2	C	1.3	A
EB 34	Passing Zone	3.9	B	1.3	A
EB 35	Passing Constrained	4.0	C	1.2	A

Notes: Bold/Highlighted indicates a poor LOS

TABLE 6: HCM TRAFFIC HIGHWAY OPERATIONS – OPENING 2029, WESTBOUND SD 38

ID #	Segment Type	AM PEAK HOUR		PM PEAK HOUR	
		Density	LOS	Density	LOS
SD Highway 38 Westbound					
WB 1	Passing Constrained	0.7	A	4.4	C
WB 2	Passing Zone	0.7	A	4.2	C
WB 3	Passing Constrained	0.8	A	2.1	B
WB 4	Passing Zone	0.8	A	2.1	B
WB 5	Passing Constrained	0.7	A	2.0	A
WB 6	Passing Zone	0.8	A	2.1	B
WB 7	Passing Constrained	0.6	A	1.5	A
WB 8	Passing Constrained	0.7	A	1.7	A
WB 9	Passing Zone	0.6	A	1.4	A
WB 10	Passing Constrained	0.7	A	1.6	A
WB 11	Passing Zone	0.6	A	1.5	A
WB 12	Passing Constrained	0.7	A	1.7	A
WB 13	Passing Constrained	0.7	A	1.7	A
WB 14	Passing Constrained	0.9	A	2.1	B
WB 15	Passing Constrained	0.8	A	1.7	A
WB 16	Passing Constrained	1.5	A	5.1	C
WB 17	Passing Constrained	1.3	A	4.9	C
WB 18	Passing Constrained	1.4	A	5.1	C
WB 19	Passing Zone	1.3	A	4.8	C
WB 20	Passing Constrained	1.4	A	5.1	C
WB 21	Passing Constrained	1.9	A	5.1	C
WB 22	Passing Zone	1.7	A	4.1	C
WB 23	Passing Zone	0.3	A	0.7	A
WB 24	Passing Zone	0.3	A	0.7	A
WB 25	Passing Zone	0.3	A	0.6	A
WB 26	Passing Constrained	0.3	A	0.8	A
WB 27	Passing Zone	0.3	A	0.6	A
WB 28	Passing Constrained	0.3	A	0.8	A
WB 29	Passing Constrained	0.3	A	0.8	A
WB 30	Passing Zone	0.3	A	0.6	A
WB 31	Passing Constrained	0.3	A	0.8	A
WB 32	Passing Zone	0.3	A	0.7	A
WB 33	Passing Constrained	0.3	A	0.8	A
WB 34	Passing Zone	0.3	A	0.7	A
WB 35	Passing Constrained	0.5	A	1.0	A

Notes: Bold/Highlighted indicates a poor LOS

Under the Opening Year 2029 conditions, the traffic operations analysis showed acceptable operations at all of the highway segments within the study area, with all segments achieving LOS C or greater during both the AM and PM peak hours.

In general, the Opening Year 2029 condition traffic operations demonstrated acceptable performance measures throughout the majority of intersections and highway segments within the study area. The desired LOS was realized for all intersections and highway segments during the AM and PM peak hours with the exception of the Mickelson Road/260th Street intersection.

Interim Year 2040

Interim Year 2040 traffic operations analysis used future year traffic volumes and posted travel speeds. The SD 38 & Mickelson Road/260th Street intersection was analyzed under traffic signal control. The results of the Interim Year 2040 intersection capacity analysis can be seen in **Figure 2** and **Table 7** below.

TABLE 7: HCM TRAFFIC INTERSECTION OPERATIONS – INTERIM YEAR 2040

ID #	SD Hwy 38 Cross Street(s)	Intersection Control	AM PEAK HOUR		PM PEAK HOUR	
			Delay	LOS	Delay	LOS
1	SD Highway 19 / 457th Avenue	TWSC	11.1	B	11.2	B
2	459th Avenue	TWSC	10.9	B	12.4	B
3	I-90 Speedway Entrance	TWSC	0.0	A	0.0	A
4	Western Avenue / 463rd Avenue	TWSC	15.9	C	23.2	C
5	Main Avenue	TWSC	13.1	B	19.0	C
6	Vandemark Avenue	TWSC	13.6	B	14.6	B
7	2nd Street	TWSC	21.2	C	25.6	D
8	West Central High School Entrance	TWSC	13.5	B	13.2	B
9	Railroad Street / 464th Avenue	TWSC	25.3	D	26.2	D
10	Mickelson Road / 260th Street	Signal	30.1	C	29.6	C
11	466th Avenue (North)	TWSC	24.6	C	25.0	D
12	WB I-90 Exit 390	TWSC	13.1	B	27.0	D
13	EB I-90 Exit 390	TWSC	14.4	B	21.1	C
14	466th Avenue (South)	TWSC	12.6	B	13.6	B
15	County Highway 141 / 468th Avenue	TWSC	14.8	B	17.2	C
16	County Highway 139 / 469th Avenue	TWSC	21.3	C	56.2	F
17	La Mesa Drive / 470th Avenue	TWSC	23.3	C	33.0	D
18	Marion Road	Signal	17.2	B	26.5	C

Notes: Bold/Highlighted indicates a poor LOS

Under the Interim Year 2040 conditions, the traffic operations analysis showed acceptable operations at the majority of intersections within the study area, with intersections achieving LOS C or greater during both the AM and PM peak hours. The six study intersections of SD 38 & 2nd Street, SD 38 & Railroad Street/464th Avenue, SD 38 & 466th Avenue (North), SD 38 & WB I-90, SD 38 & County Highway 139/469th Avenue, and SD 38 & La Mesa Drive/470th Avenue all produced a LOS D during at least one peak hour which does not meet the LOS goal established by the SDDOT.

The results of the two-lane highway capacity analysis can be seen in **Table 8** and **Table 9**.

TABLE 8: HCM TRAFFIC HIGHWAY OPERATIONS – INTERIM YEAR 2040, EASTBOUND SD 38

ID #	Segment Type	AM PEAK HOUR		PM PEAK HOUR	
		Density	LOS	Density	LOS
SD Highway 38 Eastbound					
EB 1	Passing Zone	0.8	A	0.4	A
EB 2	Passing Constrained	0.9	A	0.4	A
EB 3	Passing Zone	0.8	A	0.4	A
EB 4	Passing Constrained	0.9	A	0.4	A
EB 5	Passing Zone	0.8	A	0.4	A
EB 6	Passing Constrained	0.9	A	0.4	A
EB 7	Passing Zone	0.8	A	0.4	A
EB 8	Passing Zone	0.8	A	0.3	A
EB 9	Passing Constrained	1.0	A	0.5	A
EB 10	Passing Zone	0.8	A	0.4	A
EB 11	Passing Zone	0.8	A	0.4	A
EB 12	Passing Constrained	1.0	A	0.5	A
EB 13	Passing Zone	0.8	A	0.4	A
EB 14	Passing Constrained	1.6	A	0.8	A
EB 15	Passing Zone	4.9	C	2.4	B
EB 16	Passing Constrained	5.3	C	2.6	B
EB 17	Passing Zone	4.9	C	2.4	B
EB 18	Passing Zone	5.2	C	2.1	B
EB 19	Passing Constrained	5.1	C	2.0	A
EB 20	Passing Constrained	5.4	C	2.2	B
EB 21	Passing Constrained	5.8	C	2.6	B
EB 22	Passing Constrained	1.8	A	1.7	A
EB 23	Passing Constrained	1.7	A	1.3	A
EB 24	Passing Zone	1.5	A	1.2	A
EB 25	Passing Constrained	1.7	A	1.3	A
EB 26	Passing Zone	1.5	A	1.2	A
EB 27	Passing Constrained	1.7	A	1.3	A
EB 28	Passing Zone	1.6	A	1.3	A
EB 29	Passing Zone	2.1	B	1.9	A
EB 30	Passing Constrained	2.3	B	1.9	A
EB 31	Passing Zone	2.0	A	1.8	A
EB 32	Passing Constrained	2.3	B	1.9	A
EB 33	Passing Constrained	5.6	C	1.9	A
EB 34	Passing Zone	5.3	C	1.8	A
EB 35	Passing Constrained	5.4	C	1.8	A

Notes: Bold/Highlighted indicates a poor LOS

TABLE 9: HCM TRAFFIC HIGHWAY OPERATIONS – INTERIM YEAR 2040, WESTBOUND SD 38

ID #	Segment Type	AM PEAK HOUR		PM PEAK HOUR	
		Density	LOS	Density	LOS
SD Highway 38 Westbound					
WB 1	Passing Constrained	1.0	A	6.0	C
WB 2	Passing Zone	1.0	A	5.8	C
WB 3	Passing Constrained	1.2	A	2.9	B
WB 4	Passing Zone	1.2	A	3.0	B
WB 5	Passing Constrained	1.1	A	2.8	B
WB 6	Passing Zone	1.2	A	3.0	B
WB 7	Passing Constrained	0.9	A	2.0	A
WB 8	Passing Constrained	1.0	A	2.2	B
WB 9	Passing Zone	0.8	A	1.9	A
WB 10	Passing Constrained	1.0	A	2.2	B
WB 11	Passing Zone	0.9	A	2.0	A
WB 12	Passing Constrained	1.0	A	2.2	B
WB 13	Passing Constrained	1.0	A	2.2	B
WB 14	Passing Constrained	1.4	A	3.2	B
WB 15	Passing Constrained	1.1	A	2.6	B
WB 16	Passing Constrained	2.1	B	7.2	C
WB 17	Passing Constrained	1.9	A	6.8	C
WB 18	Passing Constrained	2.0	A	7.1	C
WB 19	Passing Zone	1.9	A	6.9	C
WB 20	Passing Constrained	2.0	A	7.1	C
WB 21	Passing Constrained	2.4	B	6.5	C
WB 22	Passing Zone	2.2	B	5.4	C
WB 23	Passing Zone	0.4	A	1.0	A
WB 24	Passing Zone	0.4	A	1.0	A
WB 25	Passing Zone	0.4	A	0.9	A
WB 26	Passing Constrained	0.5	A	1.2	A
WB 27	Passing Zone	0.4	A	1.0	A
WB 28	Passing Constrained	0.5	A	1.2	A
WB 29	Passing Constrained	0.5	A	1.1	A
WB 30	Passing Zone	0.4	A	0.9	A
WB 31	Passing Constrained	0.5	A	1.1	A
WB 32	Passing Zone	0.5	A	1.0	A
WB 33	Passing Constrained	0.5	A	1.1	A
WB 34	Passing Zone	0.5	A	1.0	A
WB 35	Passing Constrained	0.7	A	1.5	A

Notes: Bold/Highlighted indicates a poor LOS

Under the Interim Year 2040 conditions, the traffic operations analysis showed acceptable operations at all of the highway segments within the study area, with segments achieving LOS C or greater during both the AM and PM peak hours.

In general, the Interim Year 2040 condition traffic operations demonstrated acceptable performance measures throughout the majority of intersections and highway segments within the study area. The desired LOS was realized for the majority of intersections and highway segments during the AM and PM peak hours with the exception of five study intersections that had LOS D.

Design Year 2050

Design Year 2050 traffic operations analysis used future year traffic volumes and posted travel speeds. The SD 38 & Mickelson Road/260th Street intersection was analyzed under traffic signal control. The results of the Design Year 2050 intersection capacity analysis can be seen in **Figure 3** and **Table 10** below.

TABLE 10: HCM TRAFFIC INTERSECTION OPERATIONS – DESIGN YEAR 2050

ID #	SD Hwy 38 Cross Street(s)	Intersection Control	AM PEAK HOUR		PM PEAK HOUR	
			Delay	LOS	Delay	LOS
1	SD Highway 19 / 457th Avenue	TWSC	12.2	B	12.3	B
2	459th Avenue	TWSC	11.6	B	13.5	B
3	I-90 Speedway Entrance	TWSC	0.0	A	0.0	A
4	Western Avenue / 463rd Avenue	TWSC	21.5	C	56.5	F
5	Main Avenue	TWSC	14.4	B	25.5	D
6	Vandemark Avenue	TWSC	15.4	C	16.8	C
7	2nd Street	TWSC	31.1	C	38.3	E
8	West Central High School Entrance	TWSC	15.4	C	14.8	B
9	Railroad Street / 464th Avenue	TWSC	41.4	E	42.7	E
10	Mickelson Road / 260th Street	Signal	19.2	B	21.3	C
11	466th Avenue (North)	TWSC	31.6	D	31.4	D
12	WB I-90 Exit 390	TWSC	14.9	B	66.1	F
13	EB I-90 Exit 390	TWSC	18.4	C	30.0	D
14	466th Avenue (South)	TWSC	13.9	B	15.7	C
15	County Highway 141 / 468th Avenue	TWSC	16.7	C	21.3	C
16	County Highway 139 / 469th Avenue	TWSC	42.5	E	259.5	F
17	La Mesa Drive / 470th Avenue	TWSC	39.2	E	81.5	F
18	Marion Road	Signal	19.1	B	32.1	C

Notes: Bold/Highlighted indicates a poor LOS

Under the Design Year 2050 conditions, the traffic operations analysis showed potential capacity constraints and inefficiencies at many intersections within the study area. The nine study intersections of SD 38 & Western Avenue/463rd Avenue, SD 38 & Main Avenue, SD 38 & 2nd Street, SD 38 & Railroad Street/464th Avenue, SD 38 & 466th Avenue (North), SD 38 & WB I-90, SD 38 & EB I-90, SD 38 & County Highway 139/469th Avenue, and SD 38 & La Mesa Drive/470th Avenue all produced a LOS D or worse during at least one peak hour which does not meet the LOS goal established by the SDDOT.

The results of the two-lane highway capacity analysis can be seen in **Table 11** and **Table 12**.

TABLE 11: HCM TRAFFIC HIGHWAY OPERATIONS – DESIGN YEAR 2050, EASTBOUND SD 38

ID #	Segment Type	AM PEAK HOUR		PM PEAK HOUR	
		Density	LOS	Density	LOS
SD Highway 38 Eastbound					
EB 1	Passing Zone	1.2	A	0.6	A
EB 2	Passing Constrained	1.3	A	0.6	A
EB 3	Passing Zone	1.1	A	0.5	A
EB 4	Passing Constrained	1.3	A	0.6	A
EB 5	Passing Zone	1.1	A	0.5	A
EB 6	Passing Constrained	1.3	A	0.6	A
EB 7	Passing Zone	1.2	A	0.6	A
EB 8	Passing Zone	1.1	A	0.6	A
EB 9	Passing Constrained	1.3	A	0.7	A
EB 10	Passing Zone	1.1	A	0.5	A
EB 11	Passing Zone	1.1	A	0.5	A
EB 12	Passing Constrained	1.3	A	0.7	A
EB 13	Passing Zone	1.1	A	0.5	A
EB 14	Passing Constrained	2.1	B	1.1	A
EB 15	Passing Zone	6.7	C	3.4	B
EB 16	Passing Constrained	7.1	C	3.5	B
EB 17	Passing Zone	6.7	C	3.4	B
EB 18	Passing Zone	8.1	D	3.3	B
EB 19	Passing Constrained	7.9	C	3.1	B
EB 20	Passing Constrained	8.3	D	3.4	B
EB 21	Passing Constrained	9.2	D	4.2	C
EB 22	Passing Constrained	3.2	B	2.9	B
EB 23	Passing Constrained	2.4	B	1.9	A
EB 24	Passing Zone	2.2	B	1.8	A
EB 25	Passing Constrained	2.3	B	1.9	A
EB 26	Passing Zone	2.1	B	1.7	A
EB 27	Passing Constrained	2.4	B	1.9	A
EB 28	Passing Zone	2.2	B	1.8	A
EB 29	Passing Zone	3.3	B	2.8	B
EB 30	Passing Constrained	3.5	B	2.9	B
EB 31	Passing Zone	3.2	B	2.8	B
EB 32	Passing Constrained	3.5	B	2.9	B
EB 33	Passing Constrained	8.2	D	2.9	B
EB 34	Passing Zone	8.0	C	2.8	B
EB 35	Passing Constrained	8.0	C	2.7	B

Notes: Bold/Highlighted indicates a poor LOS

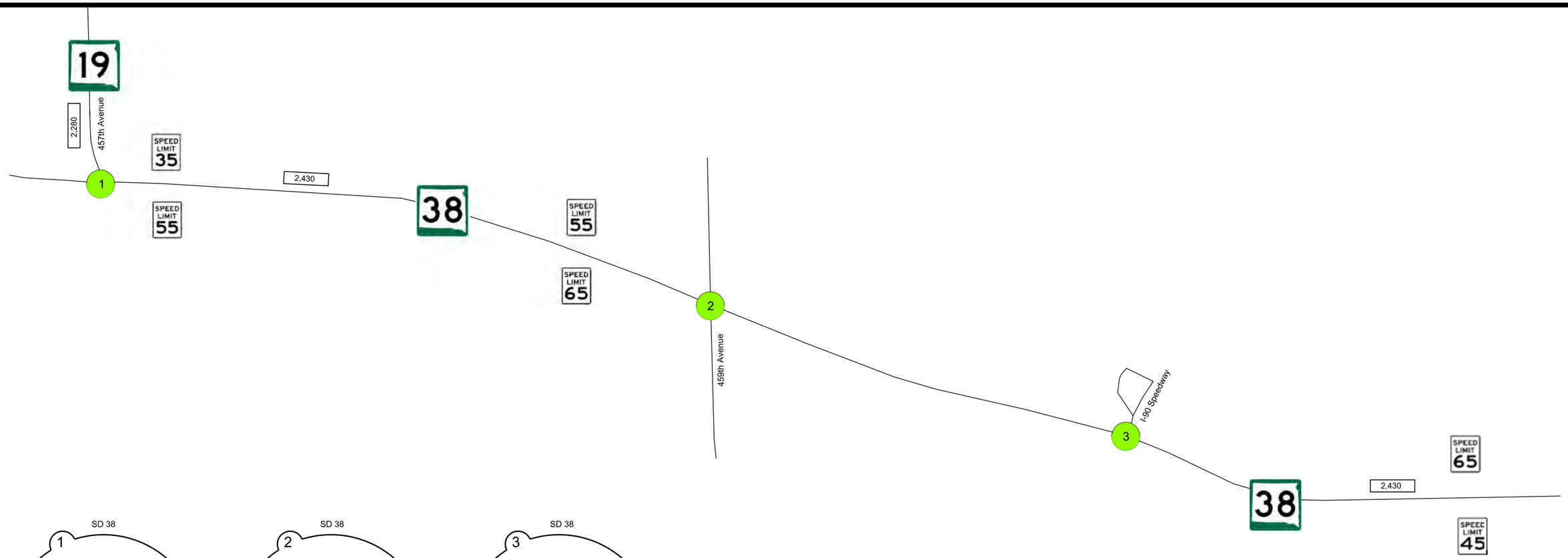
TABLE 12: HCM TRAFFIC HIGHWAY OPERATIONS – DESIGN YEAR 2050, WESTBOUND SD 38

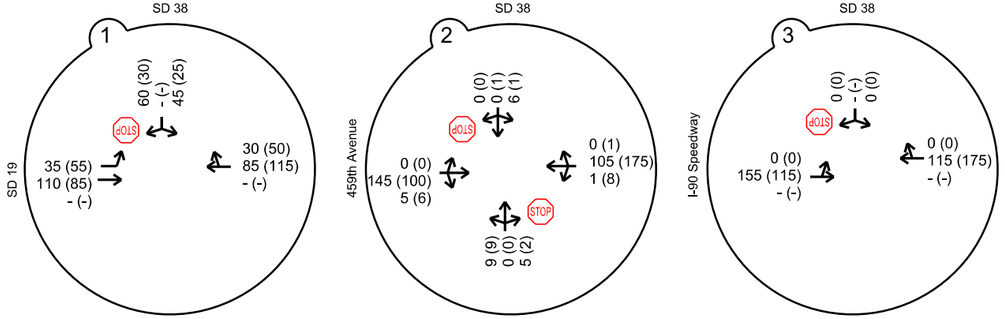
ID #	Segment Type	AM PEAK HOUR		PM PEAK HOUR	
		Density	LOS	Density	LOS
SD Highway 38 Westbound					
WB 1	Passing Constrained	1.6	A	8.7	D
WB 2	Passing Zone	1.5	A	8.5	D
WB 3	Passing Constrained	1.8	A	4.4	C
WB 4	Passing Zone	1.8	A	4.4	C
WB 5	Passing Constrained	1.7	A	4.2	C
WB 6	Passing Zone	1.8	A	4.4	C
WB 7	Passing Constrained	1.3	A	2.9	B
WB 8	Passing Constrained	1.4	A	3.2	B
WB 9	Passing Zone	1.3	A	2.8	B
WB 10	Passing Constrained	1.4	A	3.1	B
WB 11	Passing Zone	1.3	A	2.9	B
WB 12	Passing Constrained	1.4	A	3.2	B
WB 13	Passing Constrained	1.4	A	3.2	B
WB 14	Passing Constrained	2.4	B	5.4	C
WB 15	Passing Constrained	1.9	A	4.3	C
WB 16	Passing Constrained	3.3	B	10.9	D
WB 17	Passing Constrained	3.0	B	10.5	D
WB 18	Passing Constrained	3.2	B	10.8	D
WB 19	Passing Zone	3.1	B	10.7	D
WB 20	Passing Constrained	3.2	B	10.8	D
WB 21	Passing Constrained	3.3	B	8.7	D
WB 22	Passing Zone	3.1	B	7.4	C
WB 23	Passing Zone	0.6	A	1.4	A
WB 24	Passing Zone	0.6	A	1.4	A
WB 25	Passing Zone	0.6	A	1.4	A
WB 26	Passing Constrained	0.7	A	1.7	A
WB 27	Passing Zone	0.6	A	1.4	A
WB 28	Passing Constrained	0.7	A	1.7	A
WB 29	Passing Constrained	0.7	A	1.7	A
WB 30	Passing Zone	0.6	A	1.4	A
WB 31	Passing Constrained	0.7	A	1.7	A
WB 32	Passing Zone	0.6	A	1.5	A
WB 33	Passing Constrained	0.7	A	1.7	A
WB 34	Passing Zone	0.6	A	1.5	A
WB 35	Passing Constrained	0.9	A	2.1	B

Notes: Bold/Highlighted indicates a poor LOS

Under the Design Year 2050 conditions, the traffic operations analysis showed potential capacity constraints at some segments within the study area. There were four eastbound segments and eight westbound segments that resulted in LOS D during at least one of the peak hours. The segments represent areas of focus for potential capacity improvements.

Overall, the Design Year 2050 condition traffic operations demonstrated the areas within the study limits that could benefit most from potential improvements. The desired LOS was realized for the majority of intersections and highway segments during the AM and PM peak hours but there were notable exceptions that did not meet the LOS criteria goals. The recognition of issues at these locations will be used to guide future concepts.





INTERSECTION PEAK HOUR OPERATIONS

ID	INTERSECTIONS	CONTROL TYPE: SIGNAL	CONTROL TYPE: STOP	HCM 7TH EDITION LEVEL OF SERVICE: AM	HCM 7TH EDITION LEVEL OF SERVICE: PM
1	SD Highway 38 & SD Highway 19 / 457th Ave		X	B	B
2	SD Highway 38 & 459th Ave		X	B	B
3	SD Highway 38 & I-90 Speedway		X	A	A

NOTES: TWO-WAY STOP CONTROL LOS REPRESENTATIVE OF WORST CASE STOP CONTROLLED APPROACH.
* DENOTES V/C RATIO > 1

LEGEND

XX , XXX — 2029 AVERAGE DAILY TRAFFIC VOLUME (ADT)

XXX (XXX) — AM (PM) PEAK HOUR VOLUME

AM / PM — INTERSECTION LEVEL OF SERVICE

A | B | C | D | E | F

TRAFFIC SIGNAL

STOP CONTROL

XX (XX) / XXX (XXX) / XX (XX) — TURNING VOLUME BY MOVEMENT AND LANE CONFIGURATION

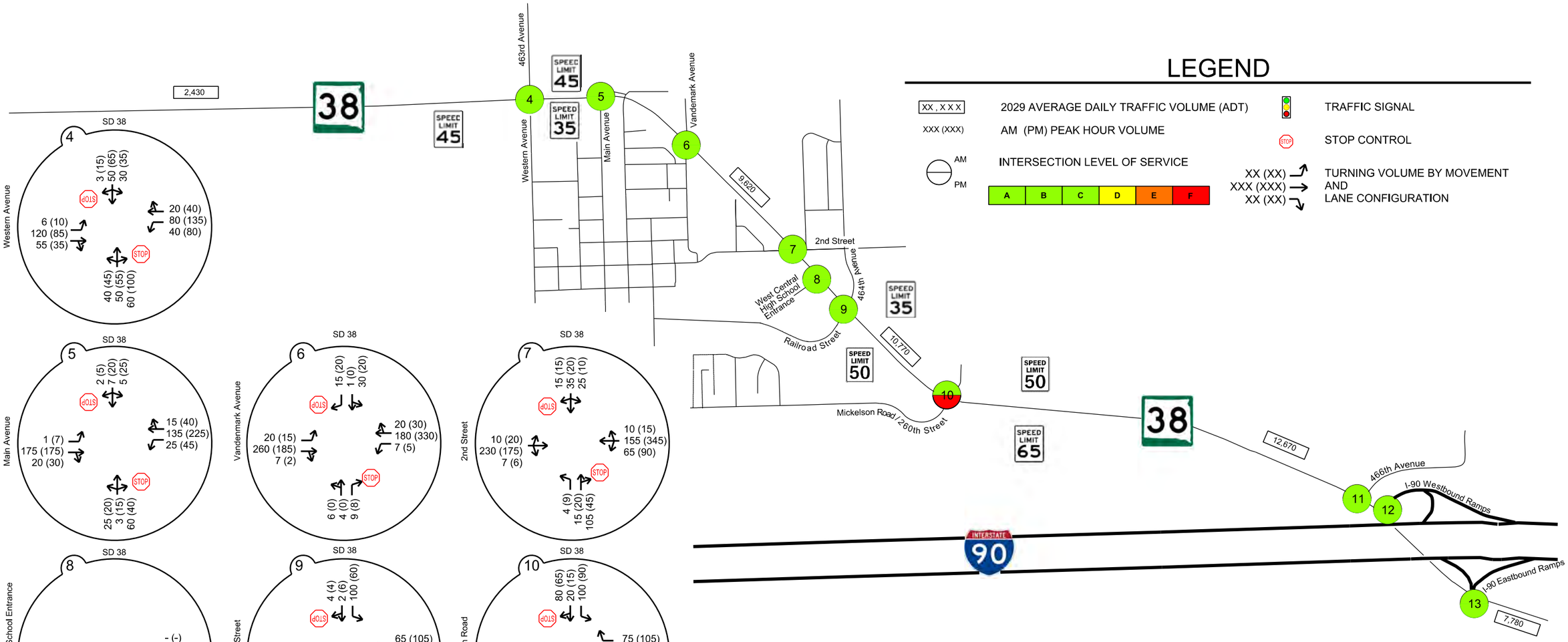
NORTH

NOT TO SCALE

SD HIGHWAY 38 TRAFFIC STUDY
2029 NO BUILD CONDITIONS
SD 38 CORRIDOR
MINNEHAHA COUNTY, SOUTH DAKOTA

DEC 2023

FIGURE 1



LEGEND

XX , XXX — 2029 AVERAGE DAILY TRAFFIC VOLUME (ADT)

XXX (XXX) — AM (PM) PEAK HOUR VOLUME

AM / PM — INTERSECTION LEVEL OF SERVICE

A | B | C | D | E | F

TRAFFIC SIGNAL

STOP CONTROL

XX (XX) / XXX (XXX) / XX (XX) — TURNING VOLUME BY MOVEMENT AND LANE CONFIGURATION

INTERSECTION PEAK HOUR OPERATIONS

ID	INTERSECTIONS	CONTROL TYPE: SIGNAL	CONTROL TYPE: STOP	HCM 7TH EDITION LEVEL OF SERVICE: AM	HCM 7TH EDITION LEVEL OF SERVICE: PM
4	SD Highway 38 & Western Ave / 463rd Ave		X	B	C
5	SD Highway 38 & Main Ave		X	B	C
6	SD Highway 38 & Vandemark Ave		X	B	B
7	SD Highway 38 & 2nd St		X	C	C
8	SD Highway 38 & West High School Entrance		X	B	B
9	SD Highway 38 & Railroad St / 464th Ave		X	C	C
10	SD Highway 38 & Mickelson Rd / 260th St		X	C	F
11	SD Highway 38 & 466th Ave (North)		X	C	C
12	SD Highway 38 & Westbound Interstate-90		X	B	C
13	SD Highway 38 & Eastbound Interstate-90		X	B	C

NOTES: TWO-WAY STOP CONTROL LOS REPRESENTATIVE OF WORST CASE STOP CONTROLLED APPROACH.
* DENOTES V/C RATIO > 1

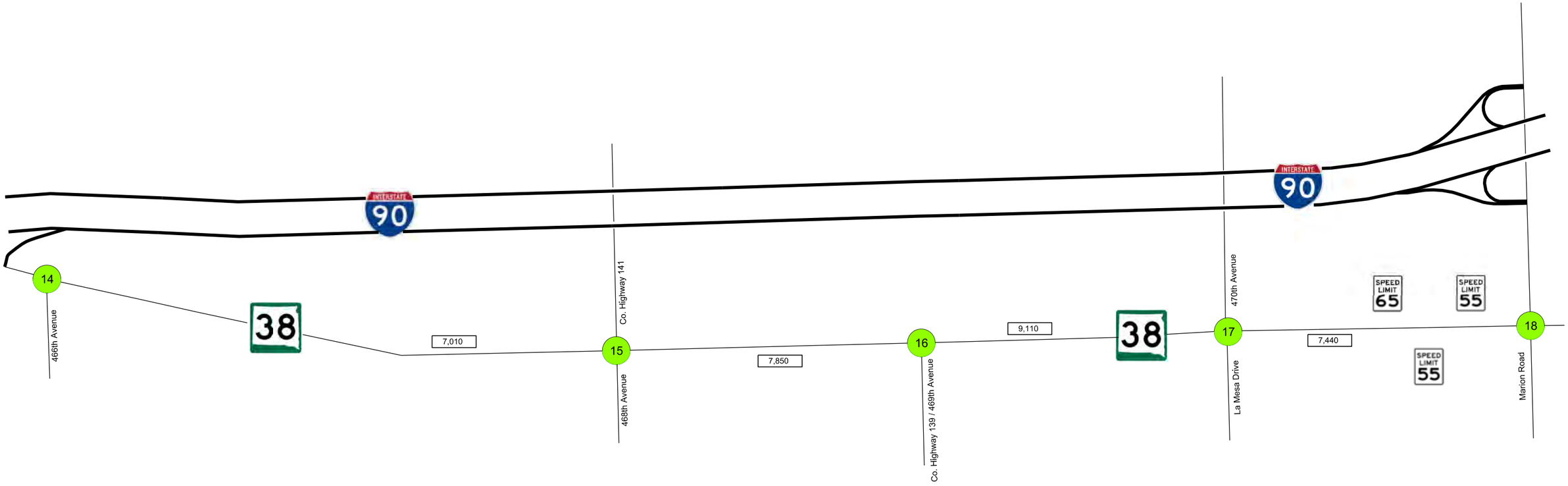
NORTH

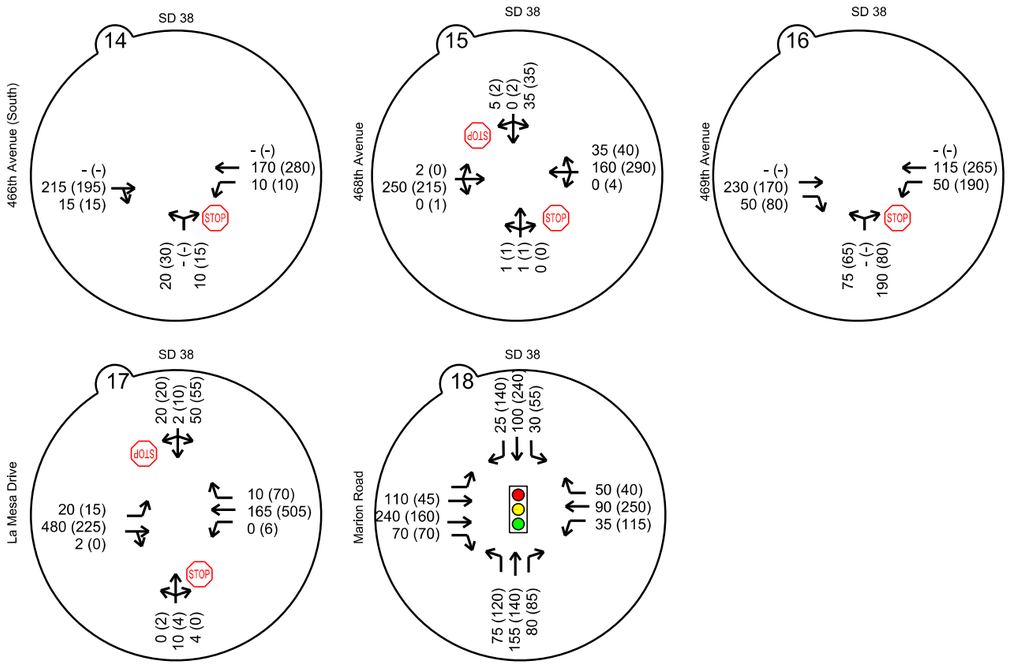
NOT TO SCALE

SD HIGHWAY 38 TRAFFIC STUDY
2029 NO BUILD CONDITIONS
SD 38 CORRIDOR
MINNEHAHA COUNTY, SOUTH DAKOTA

DEC 2023

FIGURE 1





NOT TO SCALE

INTERSECTION PEAK HOUR OPERATIONS

ID	INTERSECTIONS	CONTROL TYPE: SIGNAL	CONTROL TYPE: STOP	HCM 7TH EDITION LEVEL OF SERVICE: AM	HCM 7TH EDITION LEVEL OF SERVICE: PM
14	SD Highway 38 & 466th Ave (South)		X	B	B
15	SD Highway 38 & Co. Hwy 141 / 468th Ave		X	B	B
16	SD Highway 38 & Co. Hwy 139 / 469th Ave		X	B	C
17	SD Highway 38 & La Mesa Drive / 470th Ave		X	C	C
18	SD Highway 38 & Marion Drive	X		B	C

NOTES: TWO-WAY STOP CONTROL LOS REPRESENTATIVE OF WORST CASE STOP CONTROLLED APPROACH.
* DENOTES V/C RATIO > 1

LEGEND

XX,XXX — 2029 AVERAGE DAILY TRAFFIC VOLUME (ADT)

XXX (XXX) — AM (PM) PEAK HOUR VOLUME

AM / PM — INTERSECTION LEVEL OF SERVICE

A | B | C | D | E | F

TRAFFIC SIGNAL

STOP CONTROL

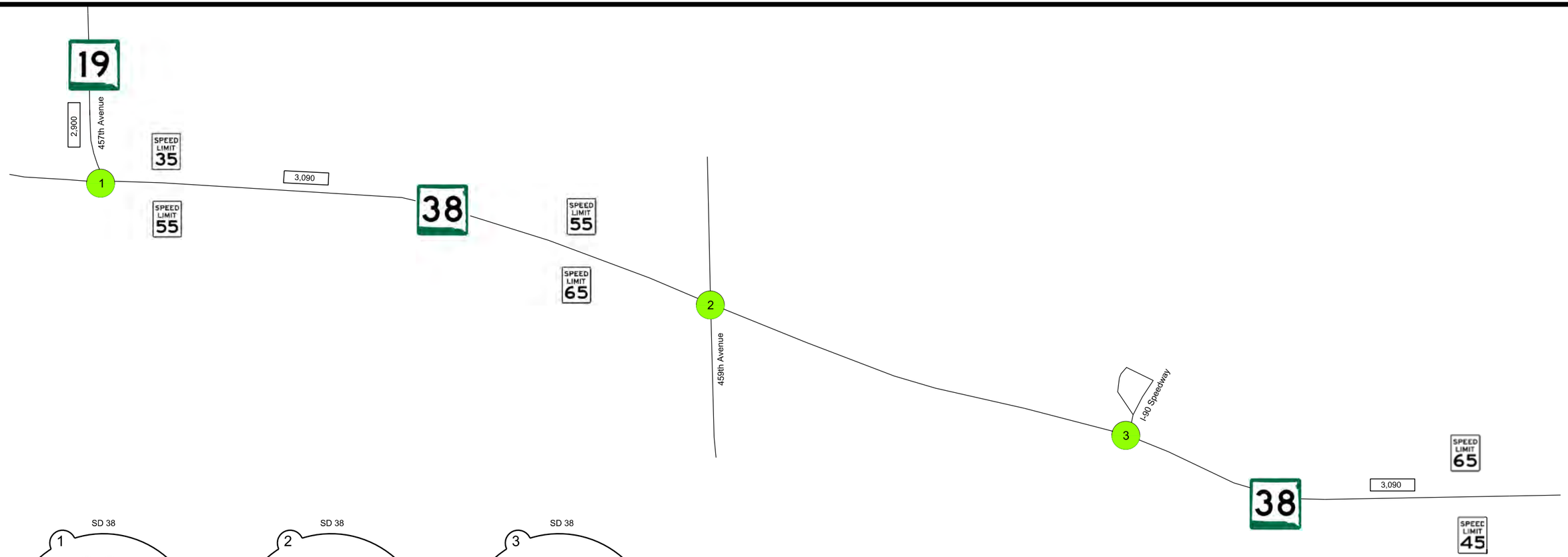
XX (XX) / XXX (XXX) / XX (XX) — TURNING VOLUME BY MOVEMENT AND LANE CONFIGURATION

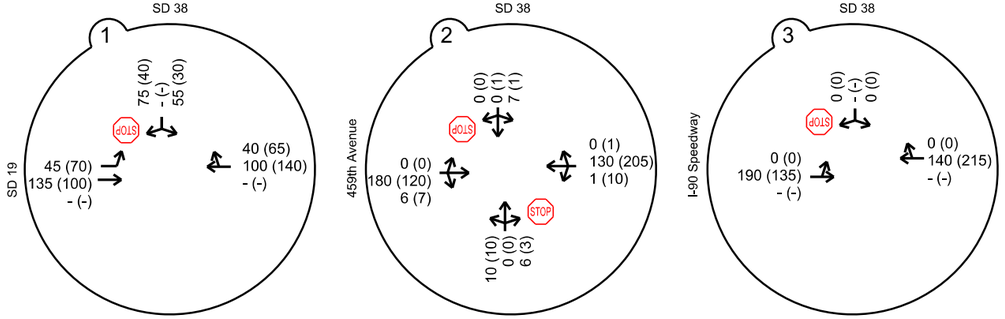
NORTH

SD HIGHWAY 38 TRAFFIC STUDY
2029 NO BUILD CONDITIONS
SD 38 CORRIDOR
MINNEHAHA COUNTY, SOUTH DAKOTA

DEC 2023

FIGURE 1





INTERSECTION PEAK HOUR OPERATIONS

ID	INTERSECTIONS	CONTROL TYPE: SIGNAL	CONTROL TYPE: STOP	HCM 7TH EDITION LEVEL OF SERVICE: AM	HCM 7TH EDITION LEVEL OF SERVICE: PM
1	SD Highway 38 & SD Highway 19 / 457th Ave		X	B	B
2	SD Highway 38 & 459th Ave		X	B	B
3	SD Highway 38 & I-90 Speedway		X	A	A

NOTES: TWO-WAY STOP CONTROL LOS REPRESENTATIVE OF WORST CASE STOP CONTROLLED APPROACH.
* DENOTES V/C RATIO > 1

LEGEND

XX , XXX — 2040 AVERAGE DAILY TRAFFIC VOLUME (ADT)

XXX (XXX) — AM (PM) PEAK HOUR VOLUME

AM / PM — INTERSECTION LEVEL OF SERVICE

A | B | C | D | E | F

TRAFFIC SIGNAL

STOP CONTROL

XX (XX) / XXX (XXX) / XX (XX) — TURNING VOLUME BY MOVEMENT AND LANE CONFIGURATION

NORTH

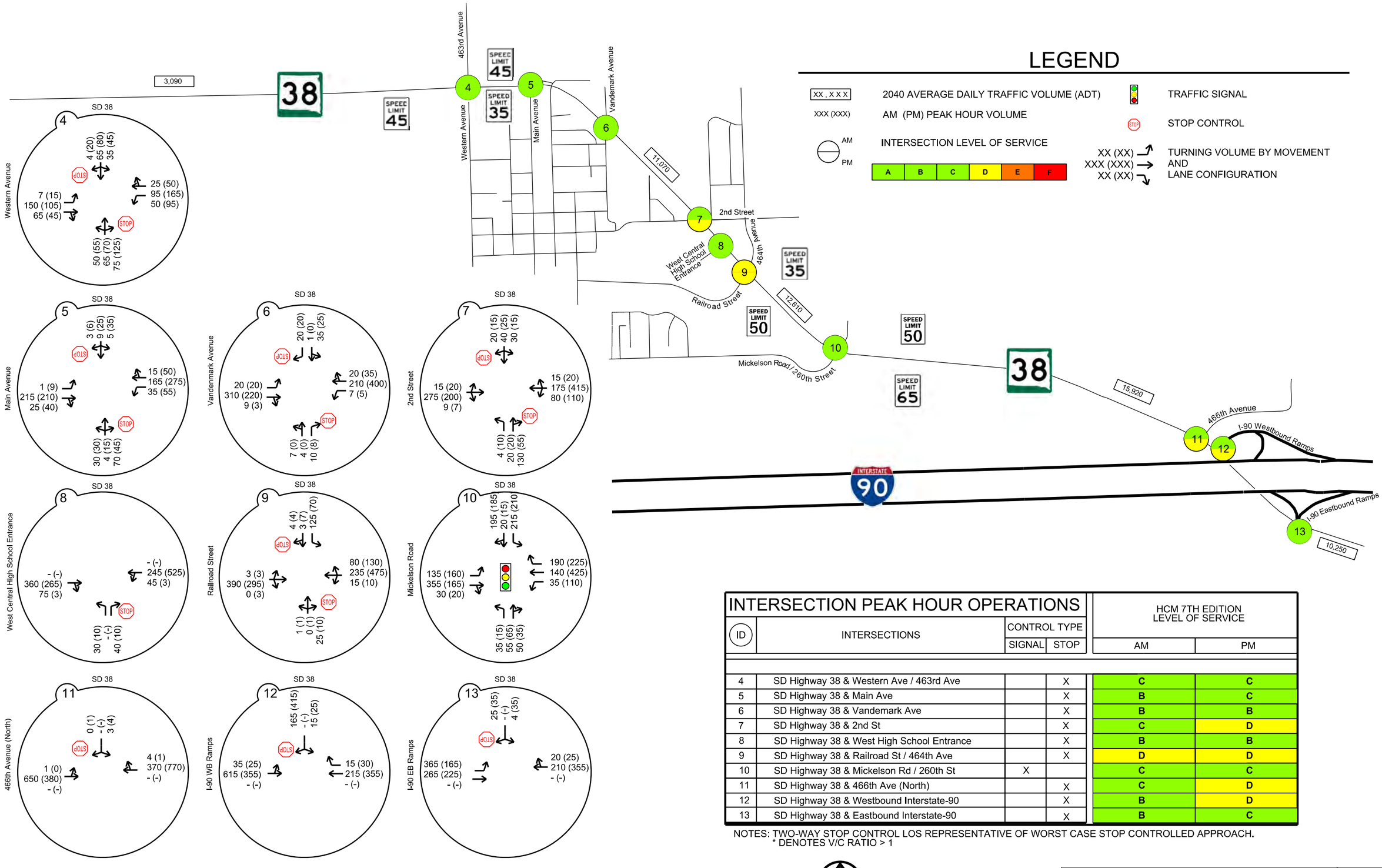
NOT TO SCALE

SD HIGHWAY 38 TRAFFIC STUDY
2040 NO BUILD CONDITIONS
SD 38 CORRIDOR
MINNEHAHA COUNTY, SOUTH DAKOTA

DEC 2023

FIGURE 2

PAGE 16



INTERSECTION PEAK HOUR OPERATIONS

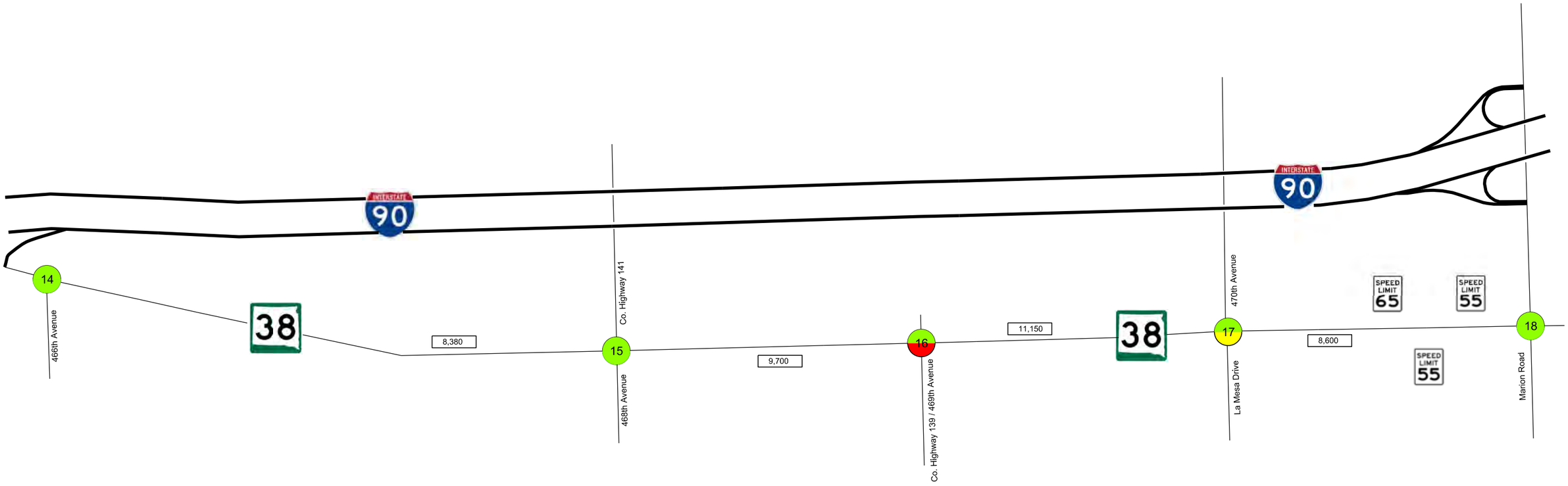
ID	INTERSECTIONS	CONTROL TYPE: SIGNAL	CONTROL TYPE: STOP	HCM 7TH EDITION LEVEL OF SERVICE: AM	HCM 7TH EDITION LEVEL OF SERVICE: PM
4	SD Highway 38 & Western Ave / 463rd Ave		X	C	C
5	SD Highway 38 & Main Ave		X	B	C
6	SD Highway 38 & Vandemark Ave		X	B	B
7	SD Highway 38 & 2nd St		X	C	D
8	SD Highway 38 & West High School Entrance		X	B	B
9	SD Highway 38 & Railroad St / 464th Ave		X	D	D
10	SD Highway 38 & Mickelson Rd / 260th St	X		C	C
11	SD Highway 38 & 466th Ave (North)		X	C	D
12	SD Highway 38 & Westbound Interstate-90		X	B	D
13	SD Highway 38 & Eastbound Interstate-90		X	B	C

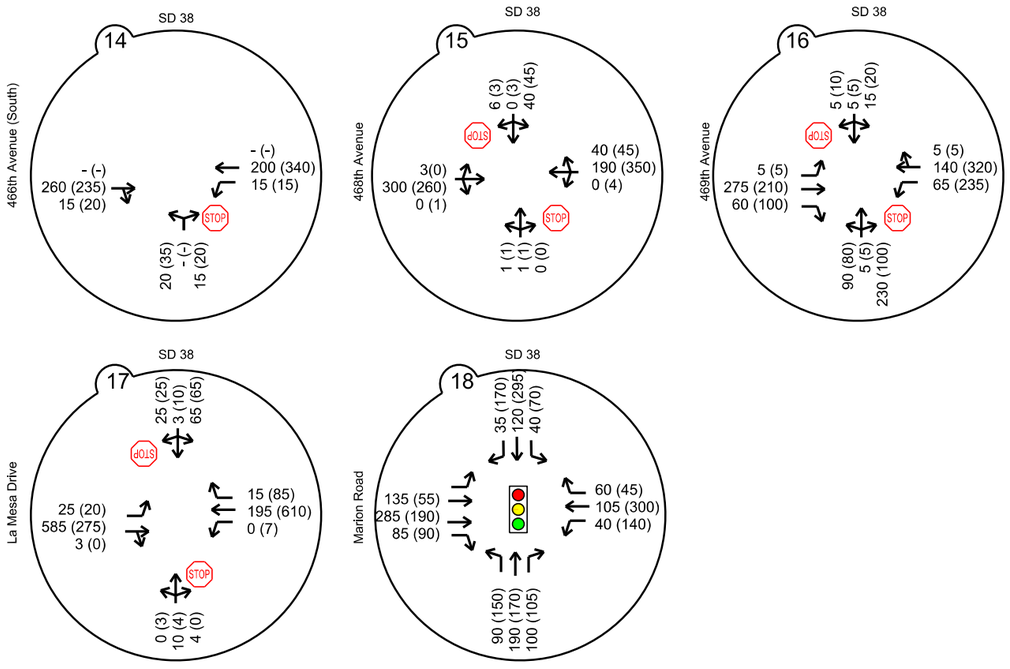
NOTES: TWO-WAY STOP CONTROL LOS REPRESENTATIVE OF WORST CASE STOP CONTROLLED APPROACH.
* DENOTES V/C RATIO > 1

NORTH
NOT TO SCALE

SD HIGHWAY 38 TRAFFIC STUDY
2040 NO BUILD CONDITIONS
SD 38 CORRIDOR
MINNEHAHA COUNTY, SOUTH DAKOTA

DEC 2023
FIGURE 2





INTERSECTION PEAK HOUR OPERATIONS

ID	INTERSECTIONS	CONTROL TYPE: SIGNAL	CONTROL TYPE: STOP	HCM 7TH EDITION LEVEL OF SERVICE: AM	HCM 7TH EDITION LEVEL OF SERVICE: PM
14	SD Highway 38 & 466th Ave (South)		X	B	B
15	SD Highway 38 & Co. Hwy 141 / 468th Ave		X	B	C
16	SD Highway 38 & Co. Hwy 139 / 469th Ave		X	C	F
17	SD Highway 38 & La Mesa Drive / 470th Ave		X	C	D
18	SD Highway 38 & Marion Drive	X		B	C

NOTES: TWO-WAY STOP CONTROL LOS REPRESENTATIVE OF WORST CASE STOP CONTROLLED APPROACH.
* DENOTES V/C RATIO > 1

LEGEND

XX,XXX — 2040 AVERAGE DAILY TRAFFIC VOLUME (ADT)

XXX (XXX) — AM (PM) PEAK HOUR VOLUME

AM / PM — INTERSECTION LEVEL OF SERVICE

A B C D E F

TRAFFIC SIGNAL

STOP CONTROL

XX (XX) / XXX (XXX) / XX (XX) — TURNING VOLUME BY MOVEMENT AND LANE CONFIGURATION

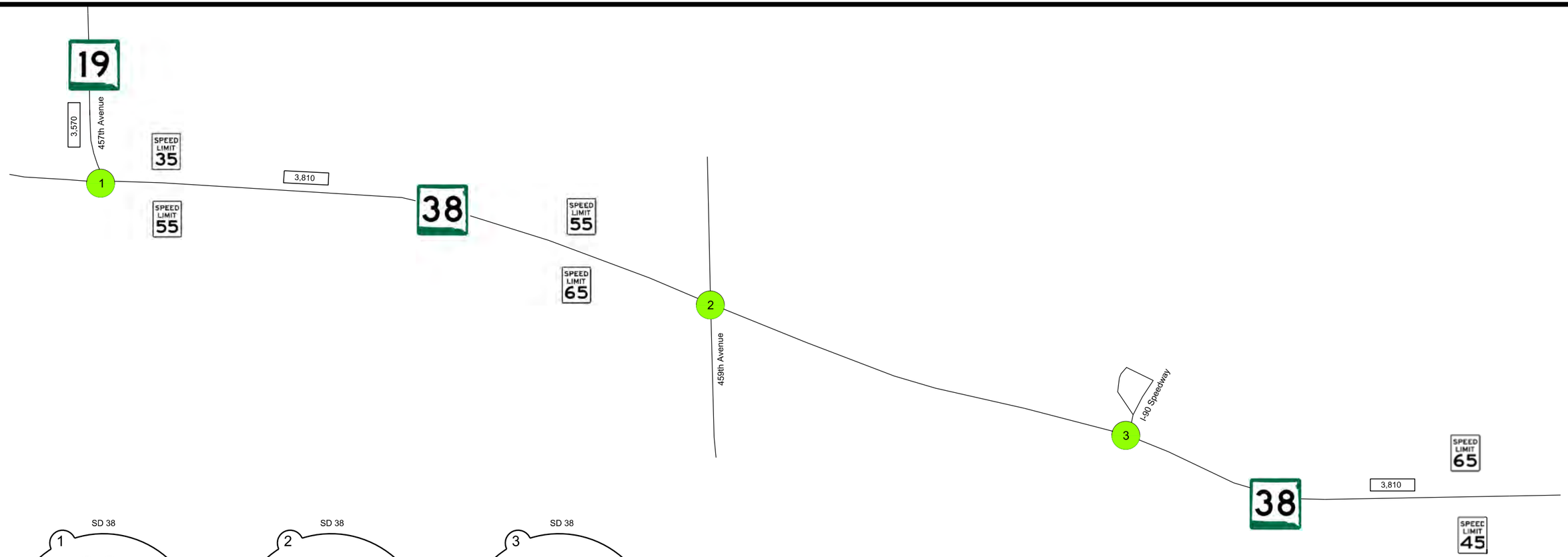
NORTH

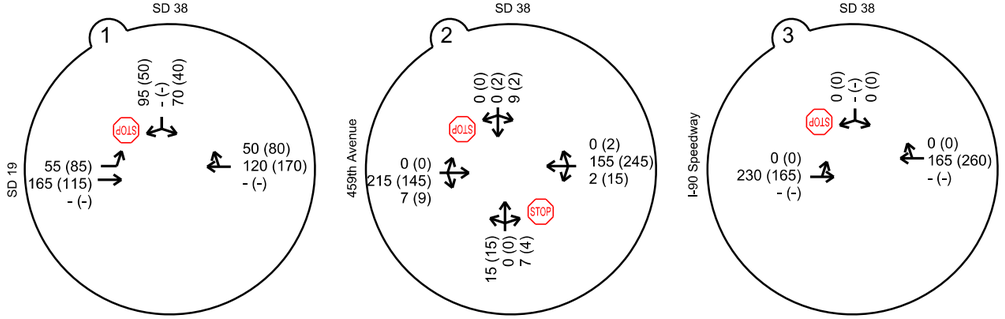
NOT TO SCALE

SD HIGHWAY 38 TRAFFIC STUDY
2040 NO BUILD CONDITIONS
SD 38 CORRIDOR
MINNEHAHA COUNTY, SOUTH DAKOTA

DEC 2023

FIGURE 2





INTERSECTION PEAK HOUR OPERATIONS

ID	INTERSECTIONS	CONTROL TYPE: SIGNAL	CONTROL TYPE: STOP	HCM 7TH EDITION LEVEL OF SERVICE: AM	HCM 7TH EDITION LEVEL OF SERVICE: PM
1	SD Highway 38 & SD Highway 19 / 457th Ave		X	B	B
2	SD Highway 38 & 459th Ave		X	B	B
3	SD Highway 38 & I-90 Speedway		X	A	A

NOTES: TWO-WAY STOP CONTROL LOS REPRESENTATIVE OF WORST CASE STOP CONTROLLED APPROACH.
* DENOTES V/C RATIO > 1

LEGEND

XX , XXX — 2050 AVERAGE DAILY TRAFFIC VOLUME (ADT)

XXX (XXX) — AM (PM) PEAK HOUR VOLUME

AM / PM — INTERSECTION LEVEL OF SERVICE

A | B | C | D | E | F

TRAFFIC SIGNAL

STOP CONTROL

XX (XX) / XXX (XXX) / XX (XX) — TURNING VOLUME BY MOVEMENT AND LANE CONFIGURATION

NORTH

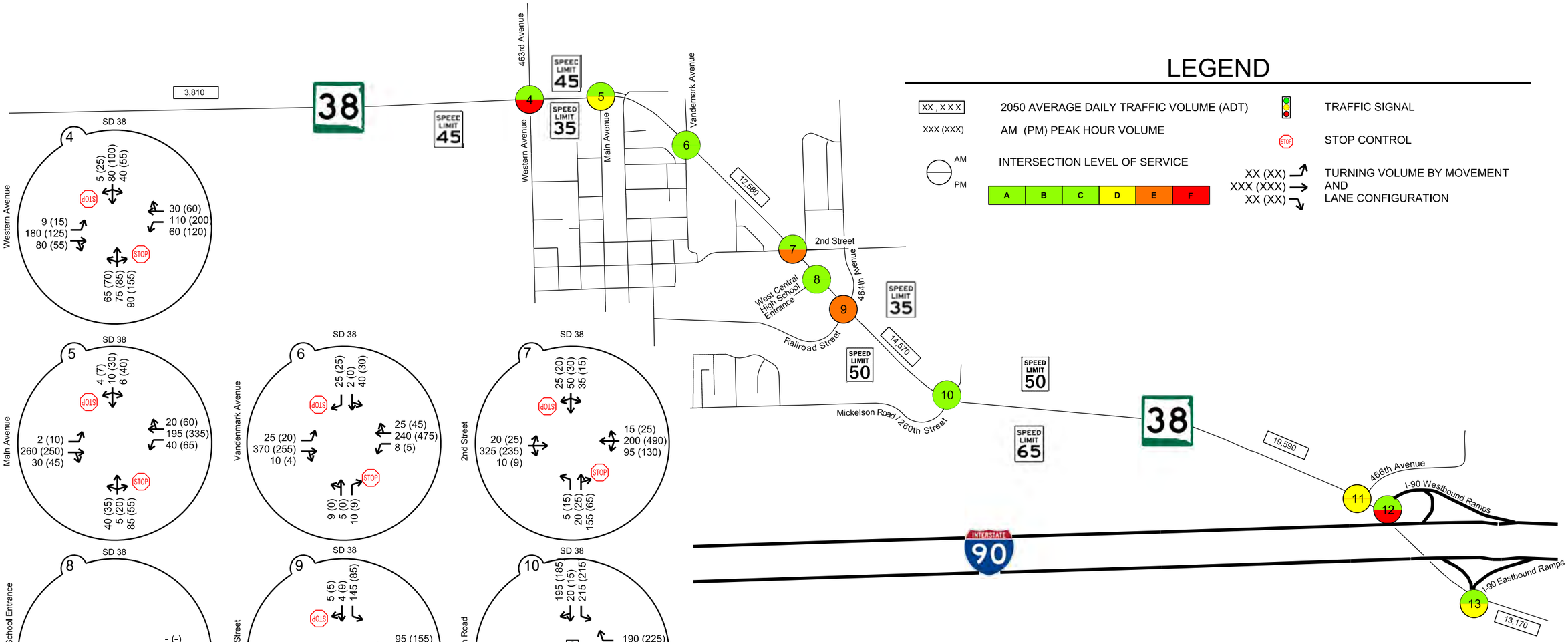
NOT TO SCALE

SD HIGHWAY 38 TRAFFIC STUDY
2050 NO BUILD CONDITIONS
SD 38 CORRIDOR
MINNEHAHA COUNTY, SOUTH DAKOTA

DEC 2023

FIGURE 3

PAGE 19



LEGEND

XX , XXX	2050 AVERAGE DAILY TRAFFIC VOLUME (ADT)
XXX (XXX)	AM (PM) PEAK HOUR VOLUME
AM / PM	INTERSECTION LEVEL OF SERVICE
A B C D E F	
	TRAFFIC SIGNAL
STOP	STOP CONTROL
XX (XX) / XXX (XXX) / XX (XX)	TURNING VOLUME BY MOVEMENT AND LANE CONFIGURATION

INTERSECTION PEAK HOUR OPERATIONS

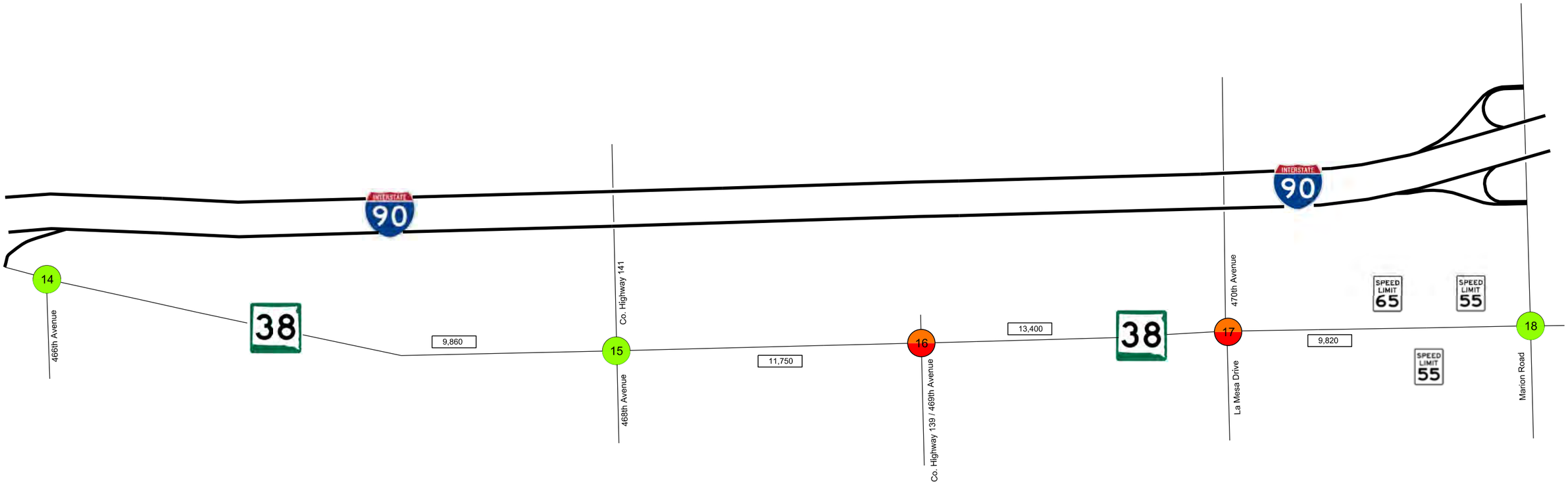
ID	INTERSECTIONS	CONTROL TYPE: SIGNAL	CONTROL TYPE: STOP	HCM 7TH EDITION LEVEL OF SERVICE: AM	HCM 7TH EDITION LEVEL OF SERVICE: PM
4	SD Highway 38 & Western Ave / 463rd Ave		X	C	F
5	SD Highway 38 & Main Ave		X	B	D
6	SD Highway 38 & Vandemark Ave		X	C	C
7	SD Highway 38 & 2nd St		X	C	E
8	SD Highway 38 & West High School Entrance		X	C	B
9	SD Highway 38 & Railroad St / 464th Ave		X	E	E
10	SD Highway 38 & Mickelson Rd / 260th St	X		B	C
11	SD Highway 38 & 466th Ave (North)		X	D	D
12	SD Highway 38 & Westbound Interstate-90		X	B	F
13	SD Highway 38 & Eastbound Interstate-90		X	C	D

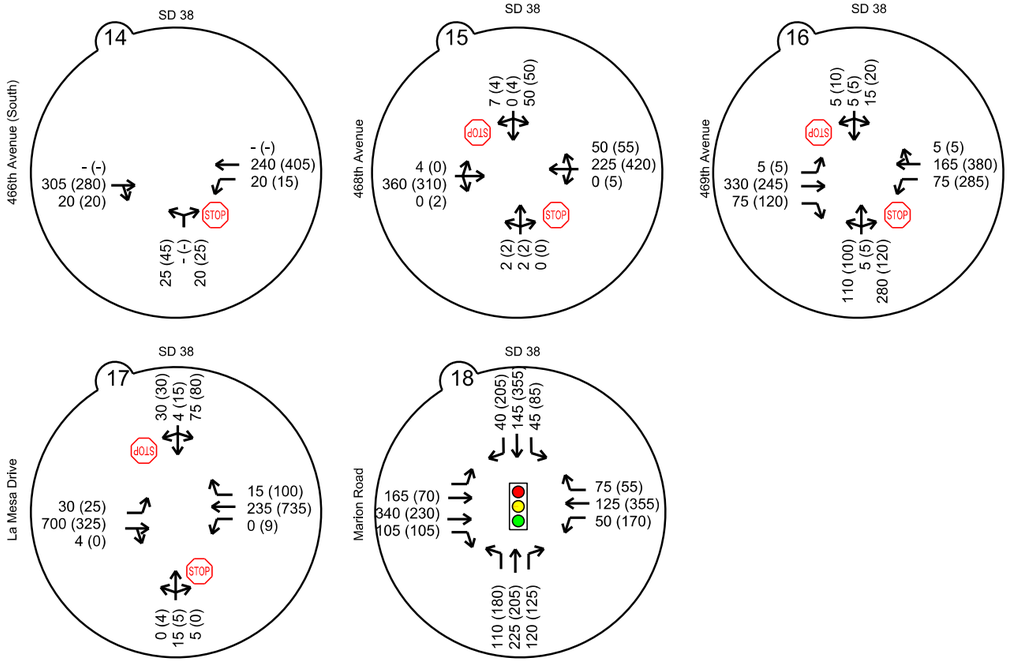
NOTES: TWO-WAY STOP CONTROL LOS REPRESENTATIVE OF WORST CASE STOP CONTROLLED APPROACH.
* DENOTES V/C RATIO > 1

NORTH
NOT TO SCALE

SD HIGHWAY 38 TRAFFIC STUDY
2050 NO BUILD CONDITIONS
SD 38 CORRIDOR
MINNEHAHA COUNTY, SOUTH DAKOTA

DEC 2023
FIGURE 3





INTERSECTION PEAK HOUR OPERATIONS

ID	INTERSECTIONS	CONTROL TYPE: SIGNAL	CONTROL TYPE: STOP	HCM 7TH EDITION LEVEL OF SERVICE: AM	HCM 7TH EDITION LEVEL OF SERVICE: PM
14	SD Highway 38 & 466th Ave (South)		X	B	C
15	SD Highway 38 & Co. Hwy 141 / 468th Ave		X	C	C
16	SD Highway 38 & Co. Hwy 139 / 469th Ave		X	E	F
17	SD Highway 38 & La Mesa Drive / 470th Ave		X	E	F
18	SD Highway 38 & Marion Drive	X		B	C

NOTES: TWO-WAY STOP CONTROL LOS REPRESENTATIVE OF WORST CASE STOP CONTROLLED APPROACH.
* DENOTES V/C RATIO > 1

LEGEND

XX,XXX — 2050 AVERAGE DAILY TRAFFIC VOLUME (ADT)

XXX (XXX) — AM (PM) PEAK HOUR VOLUME

AM / PM — INTERSECTION LEVEL OF SERVICE

A | B | C | D | E | F

TRAFFIC SIGNAL

STOP CONTROL

XX (XX) / XXX (XXX) / XX (XX) — TURNING VOLUME BY MOVEMENT AND LANE CONFIGURATION

NORTH

NOT TO SCALE

SD HIGHWAY 38 TRAFFIC STUDY
2050 NO BUILD CONDITIONS
SD 38 CORRIDOR
MINNEHAHA COUNTY, SOUTH DAKOTA

DEC 2023

FIGURE 3

Event Traffic Analysis

Traffic data was collected at the I-90 Speedway during a race event which occurred on May 27th, 2023. The traffic data was collected for a 14-hour period between 1PM – 3AM to ensure the entirety of the event traffic was recorded. Review of the traffic data revealed that the peak hours associated with the arrival of vehicles to the event and departure of vehicles from the event were 5:45 – 6:45PM and 12:15 – 1:15AM, respectively. The peak hour traffic volumes can be seen below in **Figure 4**.

FIGURE 4: EVENT TRAFFIC EXHIBIT

Existing Year 2022 traffic operations analysis used existing intersection geometry, event traffic volumes, and posted travel speeds. The results of the intersection capacity analysis can be seen in **Table 13** below.

TABLE 13: HCM TRAFFIC INTERSECTION OPERATIONS – EVENT TRAFFIC

SD Hwy 38 Cross Street(s)	Control Type	Intersection LOS / Delay (sec/veh)				EB	WB	SB
		Arrival		Departure		95% Queue Length (veh)	95% Queue Length (veh)	95% Queue Length (veh)
I-90 Speedway Entrance	**TWSC**	12.7	B	16.5	C	0.2	0	5.9

Notes: Bold/Highlighted indicates a poor LOS

Under the Existing Year 2022 conditions, the traffic operations analysis showed acceptable operations at the study intersection under the event traffic, with the intersection achieving LOS C or greater during the peak hours. There were no significant delays or vehicle queues produced during the HCM analysis. Observations from review of the video collected at this intersection, indicated that there was a maximum queue of 5 vehicles on the eastbound SD 38 approach. Additionally, there were several observed occurrences of westbound through vehicles utilizing the oncoming traffic lanes to pass slowing or turning vehicles that were entering the speedway.

Predictive Safety Analysis

Safety analysis of locations within the SD Highway 38 study corridor area of influence was completed for the design year 2050 No-Build scenario. Existing crash analysis was completed by summarizing recent historical crashes and reviewing crash trends and can be seen in the previously submitted Existing Traffic and Operations Analysis technical memo. Predictive crash analysis was completed using the Interactive Highway Safety Design Model (IHSDM) Crash Prediction analysis tool to evaluate the safety effects and predict the expected change in crashes between design year scenarios.

Results of the IHSDM evaluation—which supports the Federal Highway Administration's (FHWA's) Data-Driven Safety Analysis (DDSA) initiative—will assist with identifying design features or segments along the roadway with the greatest potential for improvement and quantify its expected safety performance. This approach combined crash, roadway inventory, and traffic volume data to provide more reliable estimates of the proposed roadway's expected safety performance. Ultimately, these results could support agencies decision making in the highway design process and inform the public as to what safety benefits can be expected from the investment.

Design year 2050 crash analysis determined the expected crash frequency and predicted crash frequency within the SD Highway 38 area of influence resulting from the No-Build roadway conditions. Predicted crash frequency is a measure of safety performance based on segments or intersections of a common facility type. Predictive crash frequency accounts for changes in traffic volume, roadway characteristics, and general time trends, but does not consider the historical crash data. The expected crash frequency is the combination of observed and predicted crash frequencies using the Empirical Bayes (EB) method to compute a weighted average. Expected crash frequency accounts for changes in traffic volume, roadway characteristics, and general time trends, and considers the historical crash data. However, the expected crash frequency is not applicable when facility type changes. To account for the potential future roadway changes we have included both the predicted and expected crash results.

In addition to crash frequency, the expected crash severity was determined by IHSDM. Crash severity represents the highest level of injury of all vehicle occupants.

A summary of the expected and predicted crashes for the SD Highway 38 segments between SD Highway 19 and Marion Road are provided in **Table 14** and **Table 15**. Along the SD 38 segments, there were a several segments that produced a high number of crash incidents. The segments from 459th Ave to Western Avenue, Mickelson Road to 466th Avenue (North), and the three segments between 466th Avenue (South) to La Mesa Drive all indicated the potential for safety performance improvements. The expected crash type distribution for segments indicated that run-off road and rear-end crashes were the most frequent crash types.

A summary of the expected and predicted crashes for the SD Highway 38 intersections are provided in **Table 16** and **Table 17**. There were several intersections that demonstrated a high number of crash instances. The SD 38 intersections with Western Avenue/463rd Street, Main Avenue, 2nd Street, Railroad Street/464th Avenue, and Marion Road all indicated the potential for safety performance improvements. The expected crash type distribution for intersections indicated that angle crashes and rear-end crashes were the most frequent crash types.

TABLE 14: SD 38 SEGMENT CRASH FREQUENCY

Location		Segment Length (Miles)	Expected Crashes				Predicted Crashes			
			Total Crashes	Total Crashes/Year	Fatal / Injury Crashes/Year	PDO Crashes/Year	Total Crashes	Total Crashes/Year	Fatal / Injury Crashes/Year	PDO Crashes/Year
Segment 1:	SD Highway 19 to 459th Avenue	2.05	43.44	1.67	0.50	1.16	47.76	1.83	0.58	1.24
Segment 2:	459th Avenue to Western Avenue	4.08	104.94	4.03	1.51	2.52	94.87	3.64	1.17	2.47
Segment 3:	Western Avenue to Main Avenue	0.24	7.61	0.29	0.11	0.17	18.36	0.70	0.22	0.47
Segment 4:	Main Avenue to Vandemark Avenue	0.31	17.45	0.67	0.17	0.49	24.91	0.95	0.30	0.65
Segment 5:	Vandemark Avenue to 2nd Street	0.47	23.07	0.88	0.46	0.41	39.24	1.50	0.48	1.02
Segment 7:	2nd Street to West Central High School	0.06	20.20	0.77	0.38	0.38	20.20	0.22	0.07	0.15
Segment 8:	West Central High School Entrance to Railroad Street	0.20	7.57	0.29	0.11	0.18	19.83	0.76	0.24	0.51
Segment 9:	Railroad Street to Mickelson Road	0.45	39.15	1.50	0.55	0.94	50.88	1.95	0.62	1.32
Segment 10:	Mickelson Road to 466th Avenue (North)	1.40	220.30	8.47	3.63	4.83	179.01	6.88	2.21	4.67
Segment 11:	466th Avenue (North) to WB I-90 Ramps	0.07	2.68	0.10	0.04	0.06	7.75	0.29	0.09	0.20
Segment 12:	WB I-90 Ramps to EB I-90 Ramps	0.28	8.86	0.34	0.12	0.20	23.11	0.88	0.28	0.60
Segment 13:	EB I-90 Ramps to 466th Avenue (South)	0.07	2.51	0.09	0.03	0.05	7.02	0.27	0.08	0.18
Segment 14:	466th Avenue (South) to County Highway 141	2.02	85.22	3.27	1.28	1.99	132.89	5.11	1.64	3.47
Segment 15:	County Highway 141 to County Highway 139	1.00	63.35	2.43	0.99	1.44	71.03	2.73	0.87	1.85
Segment 16:	County Highway 139 to La Mesa Drive	1.00	50.98	1.96	0.92	1.03	79.29	3.04	0.97	2.07
Segment 17:	La Mesa Drive to Marion Road	0.97	36.81	1.41	0.57	0.82	58.75	2.25	0.71	1.53
Total	**All SD 38 Segments**	**14.67**	**734.14**	**28.17**	**11.37**	**16.67**	**874.90**	**33.00**	**10.53**	**22.40**

Source: Interactive Highway Safety Design Model (IHSDM) 2021 Release, v17.0.0, HR Green, 2023.

TABLE 15: EXPECTED SEGMENT MANNER OF CRASH

Manner of Crash	Total Crashes
Collision with Animal	87.57
Sideswipe - same direction	28.80
Run Off Road	376.14
Angle	62.28
Rear-end	110.11
Others	78.34
Total Crashes	**743.24**

TABLE 16: SD 38 INTERSECTION CRASH FREQUENCY

Location		Expected Crashes				Predicted Crashes			
		Total Crashes	Total Crashes/Year	Fatal / Injury Crashes/Year	PDO Crashes/Year	Total Crashes	Total Crashes/Year	Fatal / Injury Crashes/Year	PDO Crashes/Year
Intersection 1:	SD Highway 19 / 457th Avenue	18.39	0.70	0.19	0.50	21.11	0.81	0.33	0.47
Intersection 2:	459th Avenue	18.94	0.72	0.29	0.43	27.93	1.07	0.46	0.61
Intersection 3:	I-90 Speedway Entrance	NA	NA	NA	NA	NA	NA	NA	NA
Intersection 4:	Western Avenue / 463rd Avenue	87.65	3.37	1.60	1.76	169.48	6.51	2.80	3.70
Intersection 5:	Main Avenue	42.11	1.61	0.67	0.94	132.77	5.10	2.20	2.90
Intersection 6:	Vandemark Avenue	28.33	1.08	0.50	0.58	74.90	2.88	1.24	1.63
Intersection 7:	2nd Street	56.15	2.15	0.81	1.34	166.63	6.40	2.76	3.64
Intersection 8:	West Central High School Entrance	18.93	0.72	0.33	0.38	73.62	2.83	1.17	1.65
Intersection 9:	Railroad Street / 464th Avenue	53.57	2.06	1.17	0.88	137.23	5.27	2.27	3.00
Intersection 10:	Mickelson Road/260th Street	38.24	1.47	0.68	0.78	160.99	6.19	2.56	3.62
Intersection 11:	466th Avenue North	24.85	0.95	0.32	0.62	33.89	1.30	0.54	0.76
Intersection 12:	WB I-90 Exit 390	20.00	0.76	0.41	0.35	15.08	0.58	0.19	0.38
Intersection 13:	EB I-90 Exit 390	9.41	0.36	0.15	0.20	10.35	0.39	0.13	0.26
Intersection 14:	466th Avenue South	29.18	1.12	0.40	0.71	75.53	2.90	1.20	1.69
Intersection 15:	County Highway 141 / 468th Avenue	44.28	1.70	0.95	0.74	87.10	3.35	1.44	1.90
Intersection 16:	County Highway 139 / 469th Avenue	32.02	1.23	0.57	0.66	57.44	2.20	0.91	1.29
Intersection 17:	La Mesa Drive / 470th Avenue	46.40	1.78	0.73	1.04	61.03	2.34	1.01	1.33
Intersection 18:	Marion Road	114.94	4.42	1.53	2.88	50.33	1.93	0.63	1.30
Total	**All SD 38 Intersections**	**683.39**	**26.20**	**11.30**	**14.79**	**1,355.41**	**52.05**	**21.84**	**30.13**

Source: Interactive Highway Safety Design Model (IHSDM) 2021 Release, v17.0.0, HR Green, 2023.

TABLE 17: EXPECTED INTERSECTION MANNER OF CRASH

Manner of Crash	Total Crashes
Run Off Road	85.49
Angle	245.00
Sideswipe	59.86
Head-on	27.53
Rear-end	196.55
Others	67.73
Total Crashes	**682.16**

25

Summary

The purpose of this technical memorandum is to document the future no-build traffic assessment at the eighteen study intersections and associated highway corridor segments along the SD Highway 38 corridor, from the SD Highway 19 intersection in Humboldt, South Dakota to the Marion Road intersection in Sioux Falls, South Dakota.

Future year 2050 traffic forecasts were constructed using traffic data supplied by the SFMPO and the SDDOT. This data was used to develop 2050 design year morning (AM) and afternoon (PM) peak hour volumes at study intersections. To develop the interim year traffic conditions, straight-line growth rates between the existing year ADT volumes and the estimated 2050 ADT volumes were calculated and the interim year traffic volumes were interpolated to develop interim year 2029 and 2040 traffic forecasts.

Using the established traffic volumes, the traffic operations at study intersections and along the two-lane highway were evaluated. The no-build conditions traffic assessment revealed that there are intersections and highway segments that will need capacity improvements within the design year timeframe.

The traffic operations analysis indicated that the following intersections and highway segments should be investigated for future capacity or operational improvements:

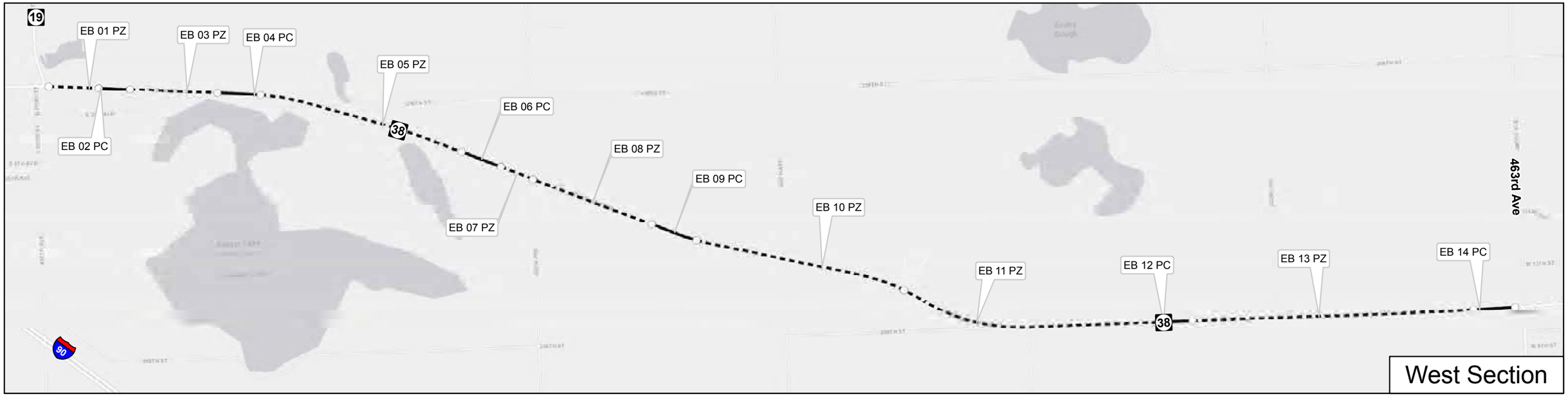
- SD Highway 38 & Western Avenue/463rd Avenue,
- SD Highway 38 & Main Avenue,
- SD Highway 38 & 2nd Street,
- SD Highway 38 & Railroad Street/464th Avenue,
- SD Highway 38 & 466th Avenue (North),
- SD Highway 38 & WB I-90 ramps,
- SD Highway 38 & EB I-90 ramps,
- SD Highway 38 & County Highway 139/469th Avenue, and
- SD Highway 38 & La Mesa Drive/470th Avenue,
- SD Highway 38 segment between Railroad Street/464th Street and EB I-90 ramps,
- SD Highway 38 segment between County Highway 139/469th Avenue and La Mesa Drive/470th Avenue.

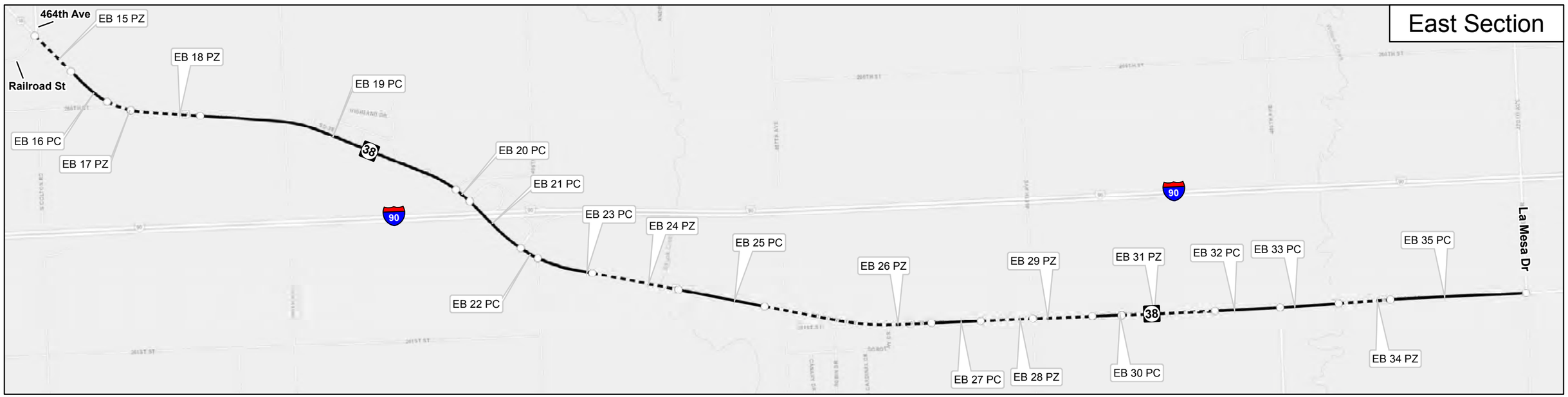
A predictive safety analysis of the SD Highway 38 study corridor was completed for the design year 2050 No-Build scenario. Along the SD 38 segments, there were a several intersections and highway segments that produced a high number of crash incidents that indicated a need for potential safety improvements.

The traffic safety analysis indicated that the following intersections and highway segments should be investigated for future safety improvements:

- SD Highway 38 & Western Avenue/463rd Avenue,
- SD Highway 38 & Main Avenue,
- SD Highway 38 & 2nd Street,
- SD Highway 38 & Railroad Street/464th Avenue,
- SD Highway 38 & Mickelson Road/260th Street, and
- SD Highway 38 & Marion Road,
- SD Highway 38 segment between 459th Street and Western Avenue/463rd Avenue,
- SD Highway 38 segment between Mickelson Road/260th Street and 466th Avenue (North),
- SD Highway 38 segment between 466th Avenue (South) and La Mesa Drive/470th Avenue.

Appendix A – Two-lane Highway Segmentation





Highway 38 Analysis Segments

Eastbound Lanes

Legend

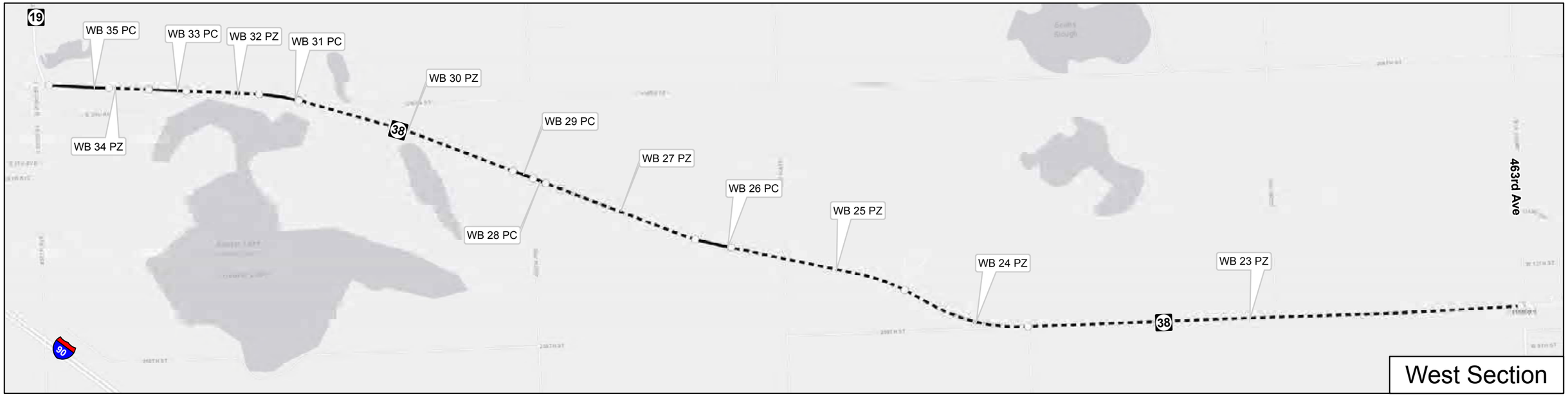
Analysis Segments

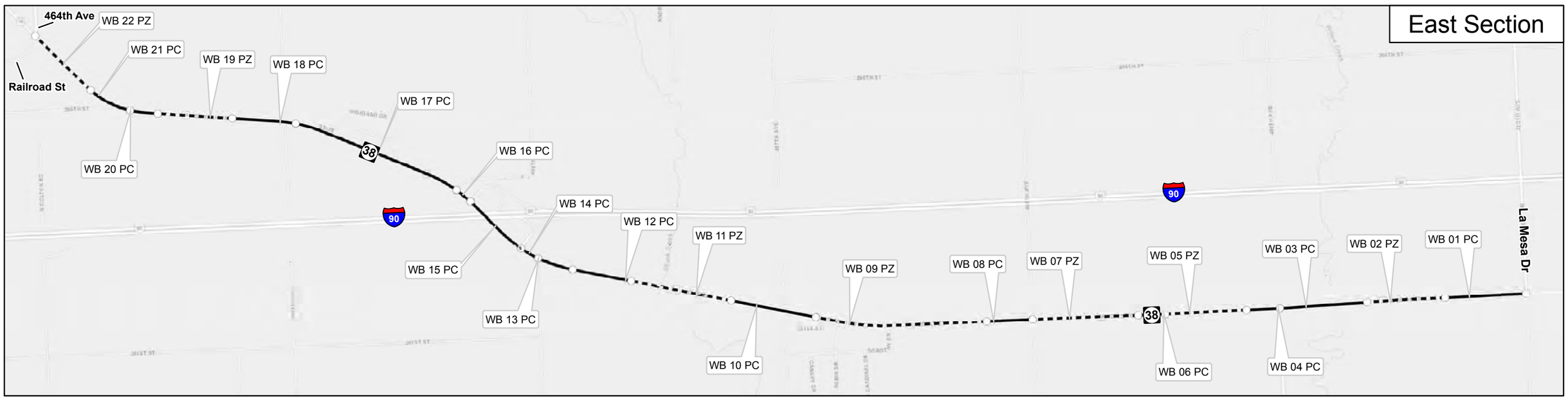
- Passing Constrained
- Passing Zones

N

0 0.5 1 Miles

HRGreen





Highway 38 Analysis Segments

Westbound Lanes

Legend

Analysis Segments

- Passing Constrained
- Passing Zones

N

0 0.5 1 Miles

HRGreen

Appendix B – HCS Output

HCS Two-Way Stop-Control Report

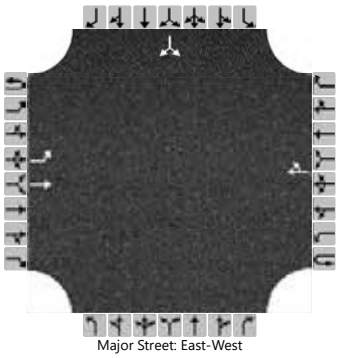
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & SD 19
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	SD 19
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	T					TR							LR	
Volume (veh/h)		35	110				85	30						45		60
Percent Heavy Vehicles (%)		30												9		11
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage					Undivided											

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.40												6.49		6.31
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.47												3.58		3.40

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		38													114	
Capacity, c (veh/h)		1305													784	
v/c Ratio		0.03													0.15	
95% Queue Length, Q_{95} (veh)		0.1													0.5	
Control Delay (s/veh)		7.8													10.4	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)		1.9												10.4		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

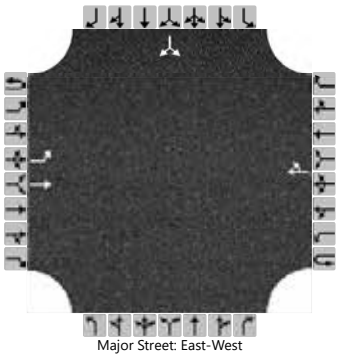
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & SD 19
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	SD 19
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	T					TR							LR	
Volume (veh/h)		55	85				115	50						25		30
Percent Heavy Vehicles (%)		2												10		14
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage					Undivided											

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.12												6.50		6.34
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.22												3.59		3.43

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		60													60	
Capacity, c (veh/h)		1396													715	
v/c Ratio		0.04													0.08	
95% Queue Length, Q_{95} (veh)		0.1													0.3	
Control Delay (s/veh)		7.7													10.5	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)		3.0												10.5		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

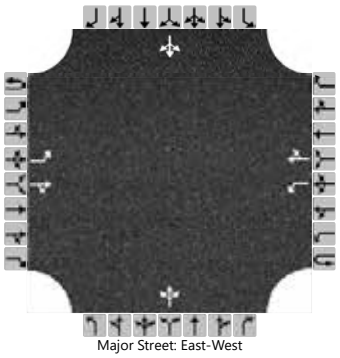
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 459th
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	459th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		0	145	5		1	105	0		9	0	5		6	0	0
Percent Heavy Vehicles (%)		3				3				13	0	0		0	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.23	6.50	6.20		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.62	4.00	3.30		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				1					15				7	
Capacity, c (veh/h)		1469				1410					722				678	
v/c Ratio		0.00				0.00					0.02				0.01	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.1				0.0	
Control Delay (s/veh)		7.5				7.6					10.1				10.4	
Level of Service (LOS)		A				A					B				B	
Approach Delay (s/veh)	0.0				0.1				10.1				10.4			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

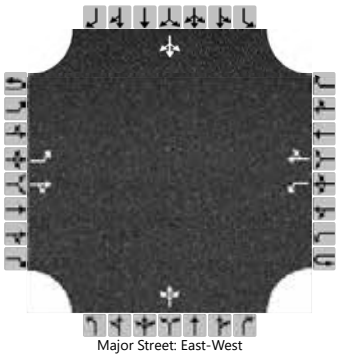
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 459th
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	459th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		0	100	6		8	175	1		9	0	2		1	1	0
Percent Heavy Vehicles (%)		0				0				13	0	0		0	100	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.23	6.50	6.20		7.10	7.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.62	4.00	3.30		3.50	4.90	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				9					12				2	
Capacity, c (veh/h)		1394				1486					649				534	
v/c Ratio		0.00				0.01					0.02				0.00	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.1				0.0	
Control Delay (s/veh)		7.6				7.4					10.6				11.8	
Level of Service (LOS)		A				A					B				B	
Approach Delay (s/veh)	0.0				0.3				10.6				11.8			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

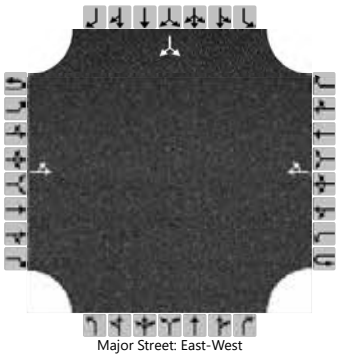
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 Expressway
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 Expressway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	155				115	0						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													0	
Capacity, c (veh/h)		1455													0	
v/c Ratio		0.00														
95% Queue Length, Q_{95} (veh)		0.0														
Control Delay (s/veh)		7.5	0.0													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)		0.0														
Approach LOS		A														

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HCS Two-Way Stop-Control Report

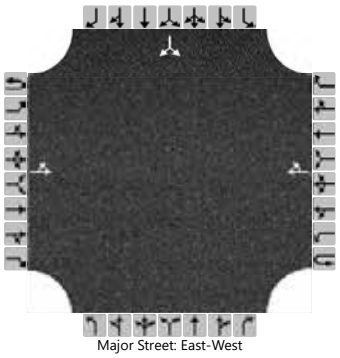
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 Expressway
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 Expressway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	115				175	0						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													0	
Capacity, c (veh/h)		1378													0	
v/c Ratio		0.00														
95% Queue Length, Q_{95} (veh)		0.0														
Control Delay (s/veh)		7.6	0.0													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)	0.0															
Approach LOS	A															

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HCS Two-Way Stop-Control Report

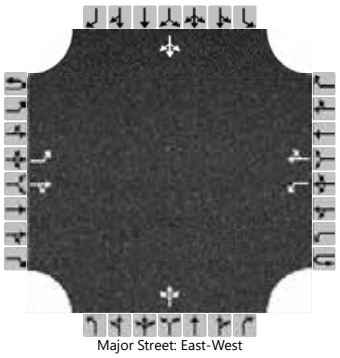
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 463rd Ave / Western Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	463rd Ave / Western Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		6	120	55		40	80	20		40	50	60		30	50	3
Percent Heavy Vehicles (%)		3				3				14	2	6		0	7	33
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.24	6.52	6.26		7.10	6.57	6.53
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.63	4.02	3.35		3.50	4.06	3.60

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		7				43					163				90	
Capacity, c (veh/h)		1476				1378					615				514	
v/c Ratio		0.00				0.03					0.26				0.18	
95% Queue Length, Q_{95} (veh)		0.0				0.1					1.1				0.6	
Control Delay (s/veh)		7.5				7.7					12.9				13.5	
Level of Service (LOS)		A				A					B				B	
Approach Delay (s/veh)	0.2				2.2				12.9				13.5			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

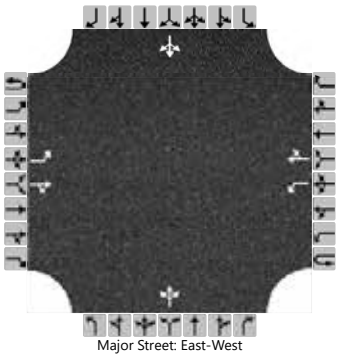
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 463rd Ave / Western Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	463rd Ave / Western Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		10	85	35		80	135	40		45	55	100		35	65	15
Percent Heavy Vehicles (%)		22				3				0	11	4		0	4	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.32				4.13				7.10	6.61	6.24		7.10	6.54	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.40				2.23				3.50	4.10	3.34		3.50	4.04	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11				87					217				125	
Capacity, c (veh/h)		1272				1449					568				437	
v/c Ratio		0.01				0.06					0.38				0.29	
95% Queue Length, Q_{95} (veh)		0.0				0.2					1.8				1.2	
Control Delay (s/veh)		7.9				7.6					15.2				16.5	
Level of Service (LOS)		A				A					C				C	
Approach Delay (s/veh)	0.6				2.4				15.2				16.5			
Approach LOS	A				A				C				C			

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HCS Two-Way Stop-Control Report

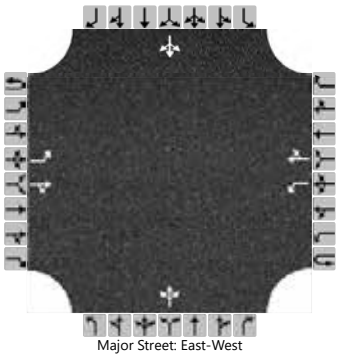
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Main Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Main Ave (9th St)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		1	175	20		25	135	15		25	3	60		5	7	2
Percent Heavy Vehicles (%)		0				11				5	0	2		0	17	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.21				7.15	6.50	6.22		7.10	6.67	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.30				3.55	4.00	3.32		3.50	4.15	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		1				27					96				15	
Capacity, c (veh/h)		1428				1307					706				529	
v/c Ratio		0.00				0.02					0.14				0.03	
95% Queue Length, Q_{95} (veh)		0.0				0.1					0.5				0.1	
Control Delay (s/veh)		7.5				7.8					10.9				12.0	
Level of Service (LOS)		A				A					B				B	
Approach Delay (s/veh)	0.0				1.1				10.9				12.0			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

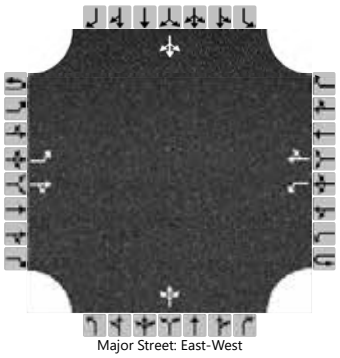
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Main Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Main Ave (9th St)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		7	175	30		45	225	40		20	15	40		25	20	5
Percent Heavy Vehicles (%)		0				0				5	0	0		0	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.15	6.50	6.20		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.55	4.00	3.30		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		8				49					82				54	
Capacity, c (veh/h)		1286				1358					544				406	
v/c Ratio		0.01				0.04					0.15				0.13	
95% Queue Length, Q_{95} (veh)		0.0				0.1					0.5				0.5	
Control Delay (s/veh)		7.8				7.7					12.8				15.2	
Level of Service (LOS)		A				A					B				C	
Approach Delay (s/veh)	0.3				1.1				12.8				15.2			
Approach LOS	A				A				B				C			

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HCS Two-Way Stop-Control Report

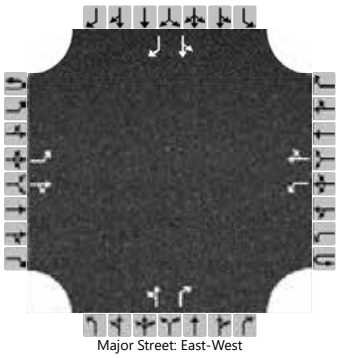
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	AM
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Vandemark Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Vandemark Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	1		0	1	1
Configuration		L		TR		L		TR		LT		R		LT		R
Volume (veh/h)		20	260	7		7	180	20		6	4	9		30	1	15
Percent Heavy Vehicles (%)		0				0				40	0	0		0	0	7
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized										No				No		
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.50	6.50	6.20		7.10	6.50	6.27
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.86	4.00	3.30		3.50	4.00	3.36

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		22				8				11		10		34		16
Capacity, c (veh/h)		1364				1283				399		757		429		821
v/c Ratio		0.02				0.01				0.03		0.01		0.08		0.02
95% Queue Length, Q_{95} (veh)		0.0				0.0				0.1		0.0		0.3		0.1
Control Delay (s/veh)		7.7				7.8				14.3		9.8		14.1		9.5
Level of Service (LOS)		A				A				B		A		B		A
Approach Delay (s/veh)	0.5				0.3				12.2				12.6			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

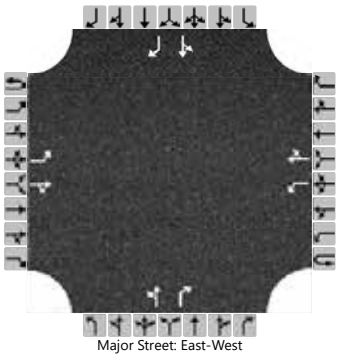
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	PM
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Vandemark Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Vandemark Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	1		0	1	1
Configuration		L		TR		L		TR		LT		R		LT		R
Volume (veh/h)		15	185	2		5	330	30		0	0	8		20	0	20
Percent Heavy Vehicles (%)		0				0				0	0	100		0	0	7
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized										No				No		
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	7.20		7.10	6.50	6.27
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	4.20		3.50	4.00	3.36

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		16				5				0		9		22		22
Capacity, c (veh/h)		1178				1381				0		642		391		660
v/c Ratio		0.01				0.00						0.01		0.06		0.03
95% Queue Length, Q_{95} (veh)		0.0				0.0						0.0		0.2		0.1
Control Delay (s/veh)		8.1				7.6						10.7		14.7		10.6
Level of Service (LOS)		A				A						B		B		B
Approach Delay (s/veh)	0.6				0.1								12.7			
Approach LOS	A				A								B			

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HCS Two-Way Stop-Control Report

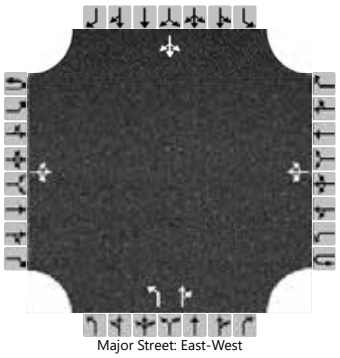
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 2nd St
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	2nd St
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		1	1	0		0	1	0
Configuration			LTR				LTR			L		TR			LTR	
Volume (veh/h)		10	230	7		65	155	10		4	15	105		25	35	15
Percent Heavy Vehicles (%)		10				16				33	8	5		0	4	8
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.20				4.26				7.43	6.58	6.25		7.10	6.54	6.28
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.29				2.34				3.80	4.07	3.35		3.50	4.04	3.37

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11				71				4		130			82	
Capacity, c (veh/h)		1323				1230				303		683			392	
v/c Ratio		0.01				0.06				0.01		0.19			0.21	
95% Queue Length, Q_{95} (veh)		0.0				0.2				0.0		0.7			0.8	
Control Delay (s/veh)		7.7	0.1	0.1		8.1	0.5	0.5		17.0		11.5			16.6	
Level of Service (LOS)		A	A	A		A	A	A		C		B			C	
Approach Delay (s/veh)	0.4				2.7				11.7				16.6			
Approach LOS	A				A				B				C			

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HCS Two-Way Stop-Control Report

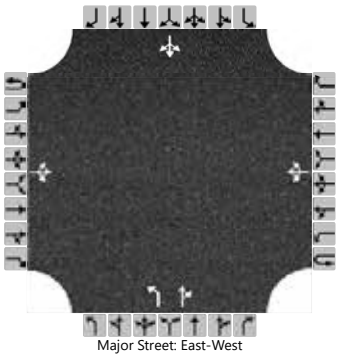
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 2nd St
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	2nd St
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		1	1	0		0	1	0
Configuration			LTR				LTR			L		TR			LTR	
Volume (veh/h)		20	175	6		90	345	15		9	20	45		10	20	15
Percent Heavy Vehicles (%)		0				0				0	0	6		0	6	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.26		7.10	6.56	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.35		3.50	4.05	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		22				98				10		71			49	
Capacity, c (veh/h)		1155				1388				238		508			315	
v/c Ratio		0.02				0.07				0.04		0.14			0.16	
95% Queue Length, Q_{95} (veh)		0.1				0.2				0.1		0.5			0.5	
Control Delay (s/veh)		8.2	0.2	0.2		7.8	0.7	0.7		20.7		13.2			18.5	
Level of Service (LOS)		A	A	A		A	A	A		C		B			C	
Approach Delay (s/veh)	1.0				2.1				14.1				18.5			
Approach LOS	A				A				B				C			

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HCS Two-Way Stop-Control Report

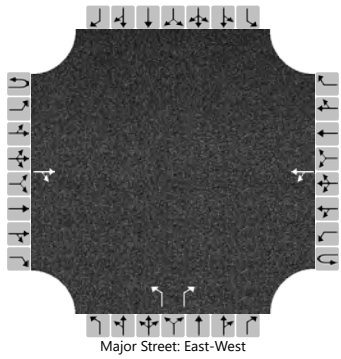
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/5/2023
Analysis Year	2029
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & West Central HS Entrance
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	West Central HS Entrance
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		1	0	1		0	0	0
Configuration				TR		LT				L		R				
Volume (veh/h)			300	60		35	215			25		35				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						38				27		38				
Capacity, c (veh/h)						1178				410		690				
v/c Ratio						0.03				0.07		0.06				
95% Queue Length, Q_{95} (veh)						0.1				0.2		0.2				
Control Delay (s/veh)						8.2	0.3			14.4		10.5				
Level of Service (LOS)						A	A			B		B				
Approach Delay (s/veh)						1.4				12.1						
Approach LOS						A				B						

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HCS Two-Way Stop-Control Report

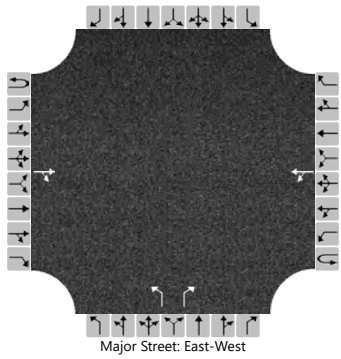
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/5/2023
Analysis Year	2029
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & West Central HS Entrance
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	West Central HS Entrance
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		1	0	1		0	0	0
Configuration				TR		LT				L		R				
Volume (veh/h)			225	2		2	440			10		10				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						2				11		11				
Capacity, c (veh/h)						1331				392		798				
v/c Ratio						0.00				0.03		0.01				
95% Queue Length, Q_{95} (veh)						0.0				0.1		0.0				
Control Delay (s/veh)						7.7	0.0			14.4		9.6				
Level of Service (LOS)						A	A			B		A				
Approach Delay (s/veh)					0.1				12.0							
Approach LOS					A				B							

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HCS Two-Way Stop-Control Report

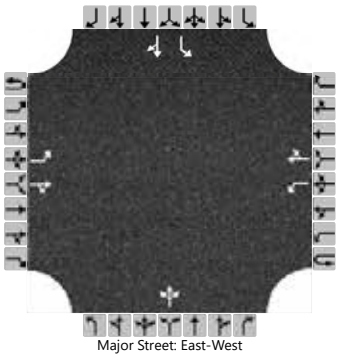
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Railroad Street
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Railroad St
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		1	1	0
Configuration		L		TR		L		TR			LTR			L		TR
Volume (veh/h)		2	330	0		10	205	65		1	0	20		100	2	4
Percent Heavy Vehicles (%)		0				0				0	0	15		0	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.35		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.44		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2				11					23			109		7
Capacity, c (veh/h)		1280				1211					638			372		587
v/c Ratio		0.00				0.01					0.04			0.29		0.01
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.1			1.2		0.0
Control Delay (s/veh)		7.8				8.0					10.9			18.6		11.2
Level of Service (LOS)		A				A					B			C		B
Approach Delay (s/veh)	0.0				0.3				10.9				18.2			
Approach LOS	A				A				B				C			

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HCS Two-Way Stop-Control Report

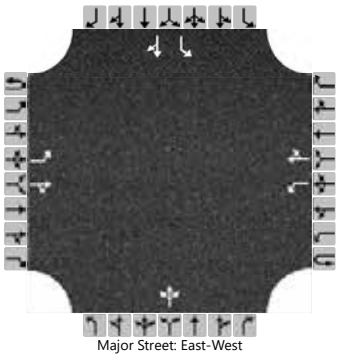
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Railroad Street
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Railroad St
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		1	1	0
Configuration		L		TR		L		TR			LTR			L		TR
Volume (veh/h)		2	250	2		10	400	105		1	1	10		60	6	4
Percent Heavy Vehicles (%)		0				40				0	0	15		5	0	0
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.50				7.10	6.50	6.35		7.15	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.56				3.50	4.00	3.44		3.55	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2				11					13			65		11
Capacity, c (veh/h)		1031				1099					599			295		390
v/c Ratio		0.00				0.01					0.02			0.22		0.03
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.1			0.8		0.1
Control Delay (s/veh)		8.5				8.3					11.1			20.6		14.5
Level of Service (LOS)		A				A					B			C		B
Approach Delay (s/veh)	0.1				0.2				11.1				19.8			
Approach LOS	A				A				B				C			

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HCS Two-Way Stop-Control Report

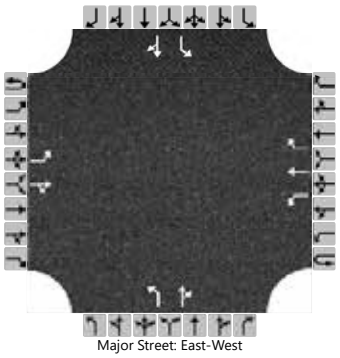
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 260th St (Mickelson Rd)
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	260th St (Mikelson Rd)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		1	1	0		1	1	0
Configuration		L		TR		L	T	R		L		TR		L		TR
Volume (veh/h)		55	355	25		30	210	75		30	25	70		100	20	80
Percent Heavy Vehicles (%)		3				26				4	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized					No											
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.36				7.14	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.43				3.54	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		60				33				33		103		109		109
Capacity, c (veh/h)		1245				1028				222		463		217		589
v/c Ratio		0.05				0.03				0.15		0.22		0.50		0.18
95% Queue Length, Q_{95} (veh)		0.2				0.1				0.5		0.8		2.5		0.7
Control Delay (s/veh)		8.0				8.6				24.0		15.0		37.1		12.5
Level of Service (LOS)		A				A				C		B		E		B
Approach Delay (s/veh)	1.0				0.8				17.2				24.8			
Approach LOS	A				A				C				C			

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HCS Two-Way Stop-Control Report

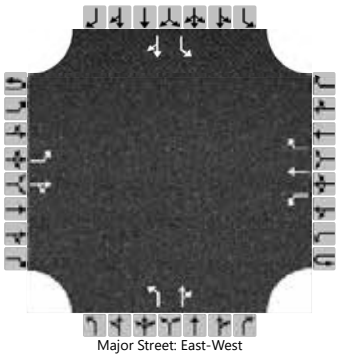
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 260th St (Mickelson Rd)
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	260th St (Mikelson Rd)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		1	1	0		1	1	0
Configuration		L		TR		L	T	R		L		TR		L		TR
Volume (veh/h)		75	205	15		90	445	105		10	30	30		90	15	65
Percent Heavy Vehicles (%)		3				1				0	3	0		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized						No										
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.11				7.10	6.53	6.20		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.21				3.50	4.03	3.30		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		82				98				11		65		98		87
Capacity, c (veh/h)		974				1334				136		266		130		414
v/c Ratio		0.08				0.07				0.08		0.25		0.75		0.21
95% Queue Length, Q_{95} (veh)		0.3				0.2				0.3		0.9		4.4		0.8
Control Delay (s/veh)		9.0				7.9				33.8		22.9		88.8		16.0
Level of Service (LOS)		A				A				D		C		F		C
Approach Delay (s/veh)	2.3				1.1				24.4				54.5			
Approach LOS	A				A				C				F			

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HCS Two-Way Stop-Control Report

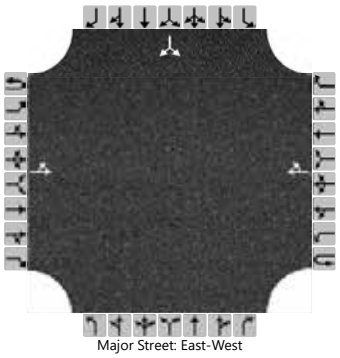
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD38 & 466th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	466th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		1	520				315	4						2		0
Percent Heavy Vehicles (%)		0												50		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.90		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.95		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		1													2	
Capacity, c (veh/h)		1223													251	
v/c Ratio		0.00													0.01	
95% Queue Length, Q_{95} (veh)		0.0													0.0	
Control Delay (s/veh)		7.9	0.0												19.5	
Level of Service (LOS)		A	A												C	
Approach Delay (s/veh)		0.0												19.5		
Approach LOS		A												C		

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HCS Two-Way Stop-Control Report

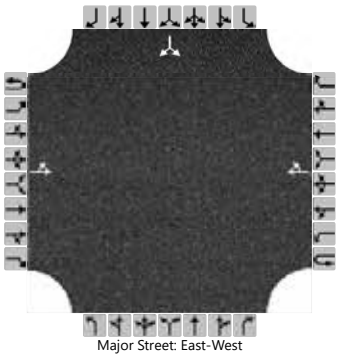
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD38 & 466th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	466th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	325				650	1						4		1
Percent Heavy Vehicles (%)		0												33		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.73		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.80		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													5	
Capacity, c (veh/h)		900													241	
v/c Ratio		0.00													0.02	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		9.0	0.0												20.3	
Level of Service (LOS)		A	A												C	
Approach Delay (s/veh)		0.0												20.3		
Approach LOS		A												C		

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HCS Two-Way Stop-Control Report

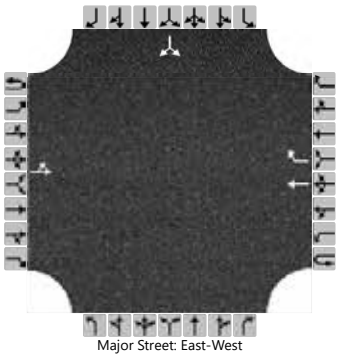
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 WB Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 WB Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		LT					T	R							LR	
Volume (veh/h)		35	515				185	15						10		140
Percent Heavy Vehicles (%)		0												56		12
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.96		6.32
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												4.00		3.41

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		38													163	
Capacity, c (veh/h)		1364													715	
v/c Ratio		0.03													0.23	
95% Queue Length, Q_{95} (veh)		0.1													0.9	
Control Delay (s/veh)		7.7	0.3												11.5	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)		0.8												11.5		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

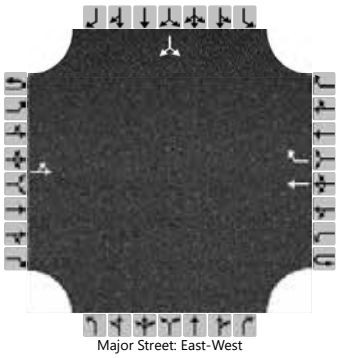
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 WB Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 WB Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		LT					T	R							LR	
Volume (veh/h)		25	300				300	25						20		355
Percent Heavy Vehicles (%)		0												6		2
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage							Undivided									

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.46		6.22
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.55		3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		27													408	
Capacity, c (veh/h)		1217													684	
v/c Ratio		0.02													0.60	
95% Queue Length, Q_{95} (veh)		0.1													4.0	
Control Delay (s/veh)		8.0	0.2												17.7	
Level of Service (LOS)		A	A												C	
Approach Delay (s/veh)		0.8												17.7		
Approach LOS		A												C		

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HCS Two-Way Stop-Control Report

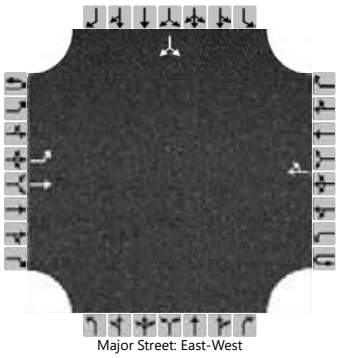
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 EB Ramp Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 EB Ramp Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	T					TR							LR	
Volume (veh/h)		305	220				170	15						4		25
Percent Heavy Vehicles (%)		1												33		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.11												6.73		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.21												3.80		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		332													32	
Capacity, c (veh/h)		1377													527	
v/c Ratio		0.24													0.06	
95% Queue Length, Q_{95} (veh)		0.9													0.2	
Control Delay (s/veh)		8.4													12.3	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)	4.9												12.3			
Approach LOS	A												B			

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HCS Two-Way Stop-Control Report

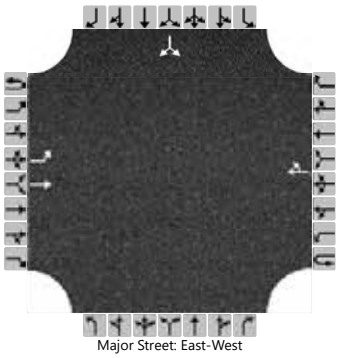
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2029
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 EB Ramp Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 EB Ramp Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	T					TR							LR	
Volume (veh/h)		140	185				290	20						25		35
Percent Heavy Vehicles (%)		12												36		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.22												6.76		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.31												3.82		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		152													65	
Capacity, c (veh/h)		1168													412	
v/c Ratio		0.13													0.16	
95% Queue Length, Q_{95} (veh)		0.4													0.6	
Control Delay (s/veh)		8.5													15.4	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)		3.7												15.4		
Approach LOS		A												C		

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HCS Two-Way Stop-Control Report

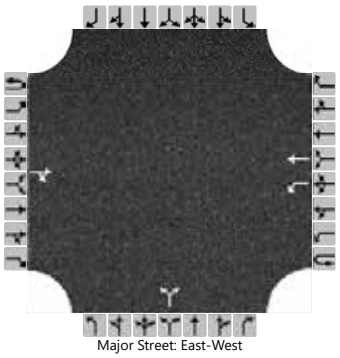
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/5/2023
Analysis Year	2029
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 466th Ave (South)
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	466th Ave (South)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			215	15		10	170			20		10				
Percent Heavy Vehicles (%)						20				33		60				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.30				6.73		6.80				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.38				3.80		3.84				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11					33					
Capacity, c (veh/h)						1217					555					
v/c Ratio						0.01					0.06					
95% Queue Length, Q_{95} (veh)						0.0					0.2					
Control Delay (s/veh)						8.0					11.9					
Level of Service (LOS)						A					B					
Approach Delay (s/veh)						0.4				11.9						
Approach LOS						A				B						

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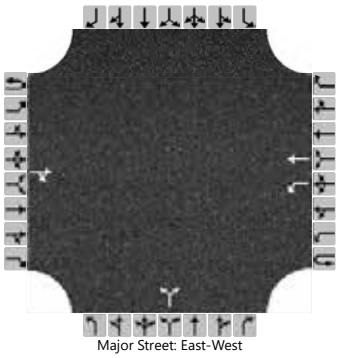
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	NM	Intersection	SD 38 & 466th Ave (South)
Agency/Co.	HRG	Jurisdiction	SDDOT
Date Performed	5/5/2023	East/West Street	SD 38
Analysis Year	2029	North/South Street	466th Ave (South)
Time Analyzed	PM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	SD 38		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			195	15		10	280			30		15				
Percent Heavy Vehicles (%)						11				20		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage																

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.21				6.60		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.30				3.68		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						11					49					
Capacity, c (veh/h)						1289					544					
v/c Ratio						0.01					0.09					
95% Queue Length, Q_{95} (veh)						0.0					0.3					
Control Delay (s/veh)						7.8					12.3					
Level of Service (LOS)						A					B					
Approach Delay (s/veh)						0.3				12.3						
Approach LOS						A				B						

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HCS Two-Way Stop-Control Report

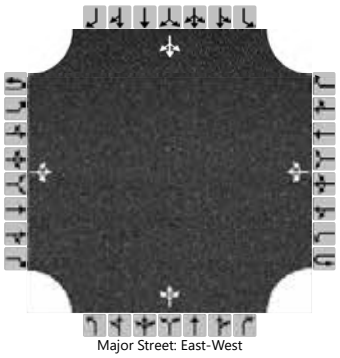
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/5/2023
Analysis Year	2029
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 468th Avenue
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	468th Ave / County Highway 141
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		2	250	0		0	160	35		1	1	0		35	0	5
Percent Heavy Vehicles (%)		0				0				0	100	0		4	0	50
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	7.50	6.20		7.14	6.50	6.70
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.90	3.30		3.54	4.00	3.75

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2				0					2				43	
Capacity, c (veh/h)		1370				1303					427				520	
v/c Ratio		0.00				0.00					0.01				0.08	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.3	
Control Delay (s/veh)		7.6	0.0	0.0		7.8	0.0	0.0			13.5				12.6	
Level of Service (LOS)		A	A	A		A	A	A			B				B	
Approach Delay (s/veh)	0.1				0.0				13.5				12.6			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

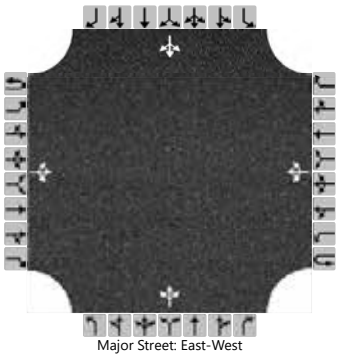
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/5/2023
Analysis Year	2029
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 468th Avenue
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	468th Ave / County Highway 141
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	215	1		4	290	40		1	1	0		35	2	2
Percent Heavy Vehicles (%)		0				0				0	0	0		4	100	50
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.20		7.14	7.50	6.70
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.30		3.54	4.90	3.75

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				4					2				42	
Capacity, c (veh/h)		1211				1344					425				420	
v/c Ratio		0.00				0.00					0.01				0.10	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.3	
Control Delay (s/veh)		8.0	0.0	0.0		7.7	0.0	0.0			13.5				14.5	
Level of Service (LOS)		A	A	A		A	A	A			B				B	
Approach Delay (s/veh)	0.0				0.1				13.5				14.5			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

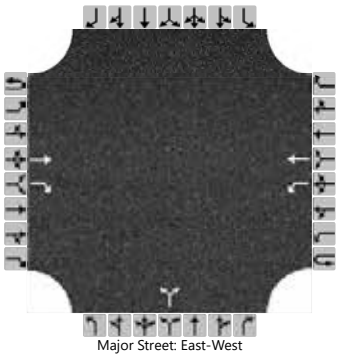
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/5/2023
Analysis Year	2029
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 469th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	469th Ave / Co Hwy 139
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	1	1	0		0	1	0		0	0	0
Configuration			T	R		L	T				LR					
Volume (veh/h)			230	50		50	115			75		190				
Percent Heavy Vehicles (%)						5				13		3				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized			No													
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.15				6.53		6.23				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.25				3.62		3.33				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						54					288					
Capacity, c (veh/h)						1240					676					
v/c Ratio						0.04					0.43					
95% Queue Length, Q_{95} (veh)						0.1					2.1					
Control Delay (s/veh)						8.0					14.2					
Level of Service (LOS)						A					B					
Approach Delay (s/veh)						2.4				14.2						
Approach LOS						A				B						

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HCS Two-Way Stop-Control Report

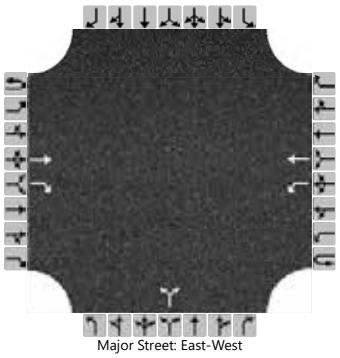
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/5/2023
Analysis Year	2029
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 469th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	469th Ave / Co Hwy 139
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	1	0	1	1	0		0	1	0		0	0	0
Configuration			T	R		L	T				LR					
Volume (veh/h)			170	80		190	265			65		80				
Percent Heavy Vehicles (%)						5				2		15				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized			No													
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.15				6.42		6.35				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.25				3.52		3.44				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						207					158					
Capacity, c (veh/h)						1274					423					
v/c Ratio						0.16					0.37					
95% Queue Length, Q_{95} (veh)						0.6					1.7					
Control Delay (s/veh)						8.4					18.5					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)						3.5				18.5						
Approach LOS						A				C						

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HCS Two-Way Stop-Control Report

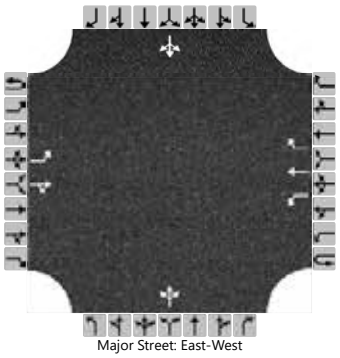
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/5/2023
Analysis Year	2029
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & La Mesa
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	La Mesa
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		0	1	0		0	1	0
Configuration		L		TR		L	T	R			LTR				LTR	
Volume (veh/h)		20	480	2		0	165	10		0	10	4		50	2	20
Percent Heavy Vehicles (%)		0				0				0	13	0		0	50	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized						No										
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.63	6.20		7.10	7.00	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.12	3.30		3.50	4.45	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		22				0					15				78	
Capacity, c (veh/h)		1396				1053					364				378	
v/c Ratio		0.02				0.00					0.04				0.21	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.1				0.8	
Control Delay (s/veh)		7.6				8.4					15.3				17.0	
Level of Service (LOS)		A				A					C				C	
Approach Delay (s/veh)	0.3				0.0				15.3				17.0			
Approach LOS	A				A				C				C			

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HCS Two-Way Stop-Control Report

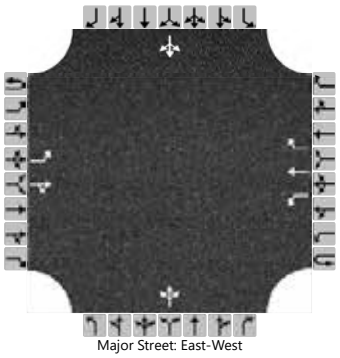
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/5/2023
Analysis Year	2029
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & La Mesa
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	La Mesa
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		0	1	0		0	1	0
Configuration		L		TR		L	T	R			LTR				LTR	
Volume (veh/h)		15	225	0		6	505	70		2	4	0		55	10	20
Percent Heavy Vehicles (%)		0				0				0	0	0		9	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized						No										
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.20		7.19	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.30		3.58	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		16				7					7				92	
Capacity, c (veh/h)		966				1333					265				307	
v/c Ratio		0.02				0.00					0.02				0.30	
95% Queue Length, Q_{95} (veh)		0.1				0.0					0.1				1.2	
Control Delay (s/veh)		8.8				7.7					18.9				21.7	
Level of Service (LOS)		A				A					C				C	
Approach Delay (s/veh)	0.5				0.1				18.9				21.7			
Approach LOS	A				A				C				C			

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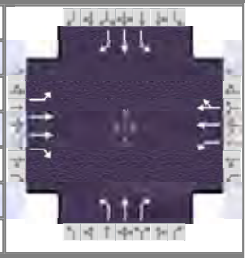
HCS Signalized Intersection Results Summary

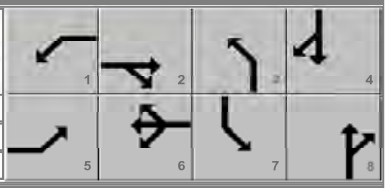
General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 5, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2029	Analysis Period	1> 7:15
Intersection	SD 38 & Marion Street	File Name	(18) SD38&Marion_AM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	110	240	70	35	90	50	75	155	80	30	100	25

Signal Information			
Cycle, s	50.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	2.1	2.4	16.2	1.8	1.6	10.0	
Yellow	4.0	0.0	4.0	4.0	0.0	4.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	1.1	4.0	2.0	3.0	2.0	3.0
Phase Duration, s	8.4	22.6	6.1	20.2	7.4	15.5	5.8	14.0
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	2.9	0.0	2.9	0.0	2.9	2.9	2.9	2.9
Queue Clearance Time (g_s), s	5.4		2.7		4.4	6.3	3.0	4.6
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4
Phase Call Probability	0.81		0.41		0.68	1.00	0.36	1.00
Max Out Probability	0.71		0.00		1.00	0.02	1.00	0.02

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	120	261	76	38	77	75	82	168	87	33	109	27
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1701	1674	1525	1714	1772	1567	1647	1674	1502	1554	1758	1466
Queue Service Time (g_s), s	3.4	2.7	1.6	0.7	1.5	1.7	2.4	4.3	2.4	1.0	2.6	0.8
Cycle Queue Clearance Time (g_c), s	3.4	2.7	1.6	0.7	1.5	1.7	2.4	4.3	2.4	1.0	2.6	0.8
Green Ratio (*g/C*)	0.09	0.37	0.37	0.36	0.32	0.32	0.07	0.23	0.23	0.04	0.20	0.20
Capacity (*c*), veh/h	151	1244	567	531	574	507	112	386	347	57	351	292
Volume-to-Capacity Ratio (*X*)	0.791	0.210	0.134	0.072	0.135	0.147	0.730	0.436	0.251	0.576	0.310	0.093
Back of Queue (*Q*), ft/ln (95 th percentile)	56.9	33.9	20.4	8.5	23.5	26	40.9	61.8	28.7	18.1	38.7	9.4
Back of Queue (*Q*), veh/ln (95 th percentile)	2.3	1.3	0.8	0.3	0.9	0.9	1.6	2.3	1.1	0.7	1.5	0.4
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	22.3	10.7	10.4	10.4	12.0	12.0	22.9	16.4	15.7	23.7	17.1	16.3
Incremental Delay (d_2), s/veh	3.5	0.4	0.5	0.0	0.5	0.6	3.4	0.3	0.1	3.4	0.2	0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	25.8	11.1	10.9	10.4	12.4	12.6	26.3	16.7	15.8	27.1	17.3	16.4
Level of Service (LOS)	C	B	B	B	B	B	C	B	B	C	B	B
Approach Delay, s/veh / LOS	14.9	B		12.1	B		18.8	B		19.0	B	
Intersection Delay, s/veh / LOS	16.2						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.08	B	2.09	B	2.27	B	2.42	B
Bicycle LOS Score / LOS	0.86	A	0.64	A	1.04	A	0.77	A

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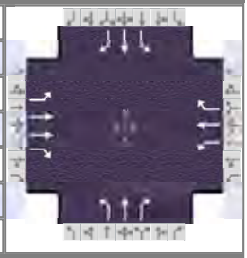
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 5, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	PM Peak	PHF	0.90
Urban Street	SD 38	Analysis Year	2029	Analysis Period	1> 16:45
Intersection	SD 38 & Marion Street	File Name	(18) SD38&Marion_PM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	45	160	70	115	250	40	120	140	85	55	240	140

Signal Information			
Cycle, s	50.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	2.5	2.3	14.3	2.9	2.0	10.0
Yellow	4.0	0.0	4.0	4.0	0.0	4.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	6.5	18.3	8.8	20.6	8.9	16.0	6.9	14.0
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	2.9	0.0	2.9	0.0	2.9	3.0	2.9	3.0
Queue Clearance Time (g_s), s	3.7		5.7		5.8	5.7	3.8	9.1
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.4
Phase Call Probability	0.50		0.83		0.84	1.00	0.57	1.00
Max Out Probability	0.41		1.00		1.00	0.07	1.00	1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	50	178	78	128	278	44	133	156	94	61	267	156
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1474	1660	1490	1688	1772	1406	1714	1772	1478	1688	1772	1478
Queue Service Time (g_s), s	1.7	2.0	2.0	3.7	6.2	1.1	3.8	3.7	2.6	1.8	7.1	4.7
Cycle Queue Clearance Time (g_c), s	1.7	2.0	2.0	3.7	6.2	1.1	3.8	3.7	2.6	1.8	7.1	4.7
Green Ratio (*g/C*)	0.05	0.29	0.29	0.10	0.33	0.33	0.10	0.24	0.24	0.06	0.20	0.20
Capacity (*c*), veh/h	74	953	428	161	588	467	168	426	356	97	354	296
Volume-to-Capacity Ratio (*X*)	0.678	0.187	0.182	0.796	0.472	0.095	0.795	0.365	0.266	0.633	0.753	0.526
Back of Queue (*Q*), ft/ln (95 th percentile)	28.6	28.3	27.3	65.8	99.2	14.3	89.7	52	31.3	29.5	125.7	59.5
Back of Queue (*Q*), veh/ln (95 th percentile)	1.0	1.1	1.1	2.6	3.9	0.5	3.6	2.0	1.2	1.2	4.9	2.3
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	23.4	13.4	13.4	22.1	13.2	11.5	22.1	15.8	15.4	23.1	18.8	17.9
Incremental Delay (d_2), s/veh	4.0	0.4	0.9	5.8	2.7	0.4	16.3	0.2	0.1	2.5	5.2	0.5
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	27.4	13.9	14.3	27.9	15.9	11.9	38.3	16.0	15.5	25.6	24.0	18.4
Level of Service (LOS)	C	B	B	C	B	B	D	B	B	C	C	B
Approach Delay, s/veh / LOS	16.2	B		18.9	B		23.7	C		22.4	C	
Intersection Delay, s/veh / LOS	20.6						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.09	B	2.09	B	2.26	B	2.27	B
Bicycle LOS Score / LOS	0.74	A	1.23	A	1.12	A	1.29	A

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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	3/15/2023
Agency	HRG	Analysis Year	2050 NB
Jurisdiction	SDDOT	Time Analyzed	AM PEAK
Project Description	EB SD38 Corridor Study	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1084
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	405	Opposing Demand Flow Rate, veh/h	245
Peak Hour Factor	0.88	Total Trucks, %	2.16
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.33465	Speed Power Coefficient (p)	0.52741
PF Slope Coefficient (m)	-1.33665	PF Power Coefficient (p)	0.76555
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1084	-	-	52.7

Vehicle Results

Average Speed, mi/h	52.7	Percent Followers, %	48.8
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	3.7
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	405	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.75	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	507
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	405	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.16
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.43973	PF Power Coefficient (p)	0.72475
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	507	-	-	52.2

Vehicle Results

Average Speed, mi/h	52.2	Percent Followers, %	52.6
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	4.1
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	405	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.75	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	535
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	405	Opposing Demand Flow Rate, veh/h	245
Peak Hour Factor	0.88	Total Trucks, %	2.16
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.33465	Speed Power Coefficient (p)	0.52741
PF Slope Coefficient (m)	-1.33665	PF Power Coefficient (p)	0.76555
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	535	-	-	52.7

Vehicle Results

Average Speed, mi/h	52.7	Percent Followers, %	48.8
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	3.7
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	405	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.75	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 4

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1494
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	483	Opposing Demand Flow Rate, veh/h	256
Peak Hour Factor	0.88	Total Trucks, %	1.63
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.28

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34129	Speed Power Coefficient (p)	0.52497
PF Slope Coefficient (m)	-1.24091	PF Power Coefficient (p)	0.80645
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1494	-	-	67.4

Vehicle Results

Average Speed, mi/h	67.4	Percent Followers, %	49.8
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	3.6
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	483	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.84	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 5

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5762
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	483	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	1.63
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.28

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.62977	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.20069	PF Power Coefficient (p)	0.78591
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5762	-	-	66.9

Vehicle Results

Average Speed, mi/h	66.9	Percent Followers, %	49.2
Segment Travel Time, minutes	0.98	Follower Density (FD), followers/mi/ln	3.6
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	483	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.84	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	383
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	488	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	1.89
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.29

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29361	PF Power Coefficient (p)	0.75772
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	383	-	-	66.9

Vehicle Results

Average Speed, mi/h	66.9	Percent Followers, %	52.8
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	3.8
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	488	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.91	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1485
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	505	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.30

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57684	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28453	PF Power Coefficient (p)	0.76145
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1485	-	-	66.9

Vehicle Results

Average Speed, mi/h	66.9	Percent Followers, %	53.4
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	4.0
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	505	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.27	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 8

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	426
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	231	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	6.47
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29307	PF Power Coefficient (p)	0.75839
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	426	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	34.6
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	231	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.91	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1212
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	242	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29321	PF Power Coefficient (p)	0.75821
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1212	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	35.7
Segment Travel Time, minutes	0.20	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	242	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.53	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1877
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	242	Opposing Demand Flow Rate, veh/h	172
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.31794	Speed Power Coefficient (p)	0.54766
PF Slope Coefficient (m)	-1.20625	PF Power Coefficient (p)	0.82046
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1877	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	31.4
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	242	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.53	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1872
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	242	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58354	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26676	PF Power Coefficient (p)	0.76864
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1872	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	34.7
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	242	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.53	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 12

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3603
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	242	Opposing Demand Flow Rate, veh/h	172
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34159	Speed Power Coefficient (p)	0.54766
PF Slope Coefficient (m)	-1.16323	PF Power Coefficient (p)	0.83771
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3603	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	29.8
Segment Travel Time, minutes	0.60	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	242	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.53	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 13

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1053
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	242	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29321	PF Power Coefficient (p)	0.75821

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1053	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	35.7
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	242	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.53	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 14

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1120
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	242	Opposing Demand Flow Rate, veh/h	172
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30804	Speed Power Coefficient (p)	0.54766
PF Slope Coefficient (m)	-1.23154	PF Power Coefficient (p)	0.80916
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1120	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	32.3
Segment Travel Time, minutes	0.19	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	242	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.53	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 15

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1272
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	278	Opposing Demand Flow Rate, veh/h	188
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.31419	Speed Power Coefficient (p)	0.54284
PF Slope Coefficient (m)	-1.23547	PF Power Coefficient (p)	0.80786
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1272	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	35.6
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	278	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.54	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 16

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	625
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	278	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29323	PF Power Coefficient (p)	0.75819
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	625	-	-	67.8

Vehicle Results

Average Speed, mi/h	67.8	Percent Followers, %	38.8
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	1.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	278	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.54	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 17

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1995
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	278	Opposing Demand Flow Rate, veh/h	188
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32599	Speed Power Coefficient (p)	0.54284
PF Slope Coefficient (m)	-1.20573	PF Power Coefficient (p)	0.82101
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1995	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	34.4

Segment Travel Time, minutes	0.33	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	278	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.54	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 18

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1399
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	278	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57524	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28884	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1399	-	-	67.8

Vehicle Results

Average Speed, mi/h	67.8	Percent Followers, %	38.6
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	1.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	278	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.54	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 19

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1254
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	516	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	1.51
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.30

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29366	PF Power Coefficient (p)	0.75766
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1254	-	-	66.8

Vehicle Results			
Average Speed, mi/h	66.8	Percent Followers, %	54.3
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	4.2
Vehicle LOS	C		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	516	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.84	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 20

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	1108
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	516	Opposing Demand Flow Rate, veh/h	177
Peak Hour Factor	0.88	Total Trucks, %	1.51
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.30

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.31027	Speed Power Coefficient (p)	0.54591
PF Slope Coefficient (m)	-1.23339	PF Power Coefficient (p)	0.80813
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1108	-	-	67.3

Vehicle Results

Average Speed, mi/h	67.3	Percent Followers, %	51.4
Segment Travel Time, minutes	0.19	Follower Density (FD), followers/mi/ln	3.9
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	516	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.84	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 21

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2901
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	516	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	1.51
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.30

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.59854	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.23554	PF Power Coefficient (p)	0.77974
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2901	-	-	66.8

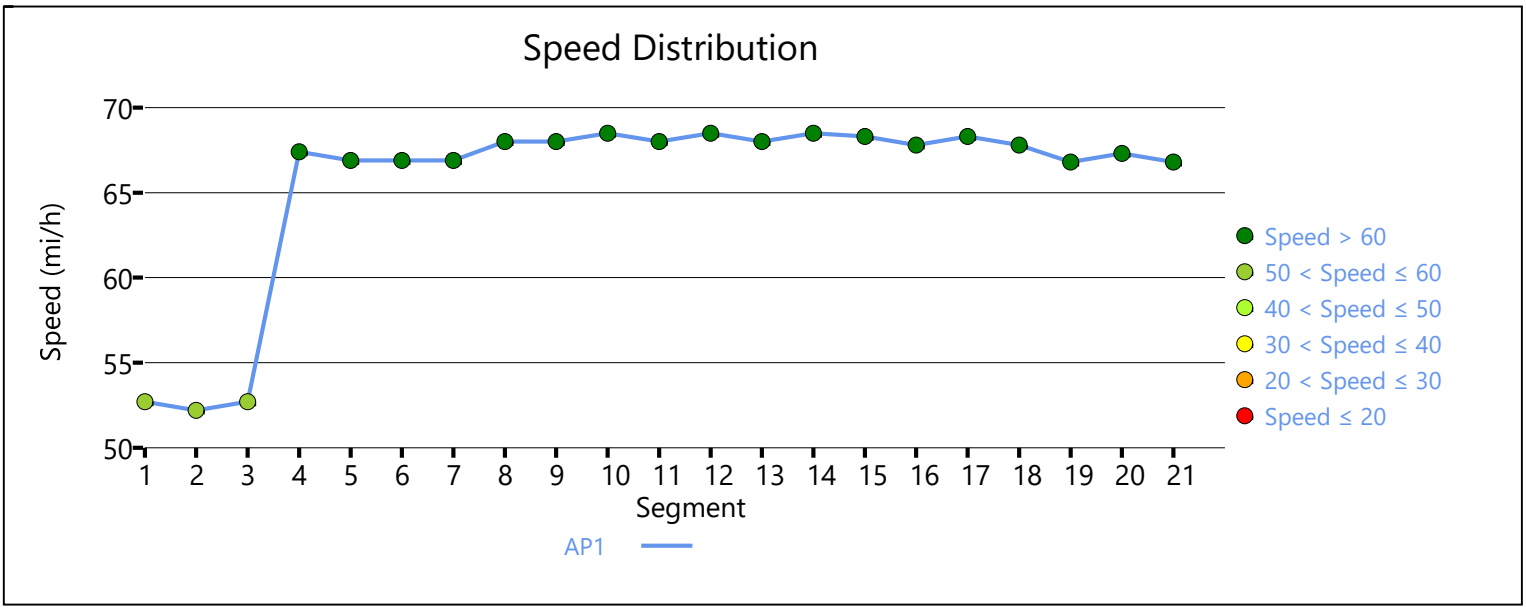
Vehicle Results

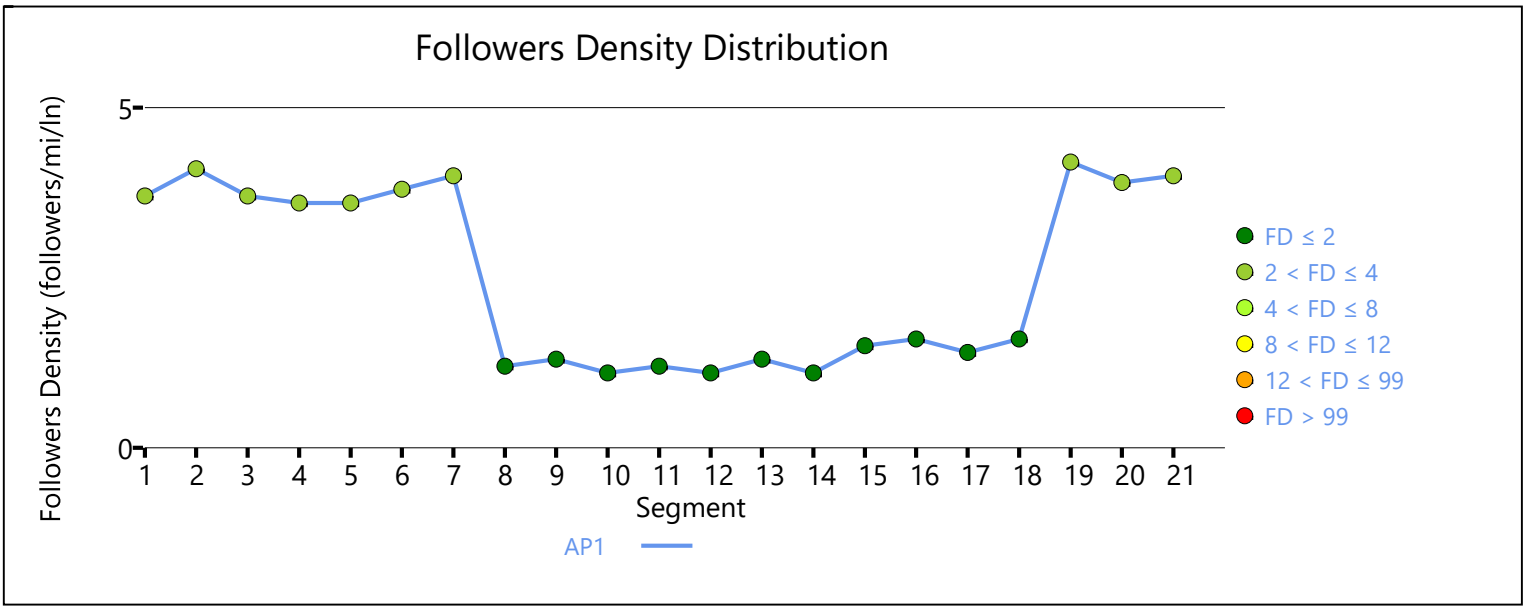
Average Speed, mi/h	66.8	Percent Followers, %	52.2
Segment Travel Time, minutes	0.49	Follower Density (FD), followers/mi/ln	4.0
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	516	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.84	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Facility Results				
T	**VMT veh-mi/p**	**VHD veh-h/p**	**Follower Density, followers/ mi/ln**	**LOS**
1	508	0.29	2.5	B





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2029 NB
Jurisdiction	SDDOT	Time Analyzed	PM PEAK
Project Description	EB SD38 Corridor Study	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1084
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	249	Opposing Demand Flow Rate, veh/h	457
Peak Hour Factor	0.90	Total Trucks, %	2.16
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.39377	Speed Power Coefficient (p)	0.48810
PF Slope Coefficient (m)	-1.37630	PF Power Coefficient (p)	0.75567
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1084	-	-	53.3

Vehicle Results

Average Speed, mi/h	53.3	Percent Followers, %	38.2
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	1.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	249	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.50	Bicycle Effective Speed Factor	4.62
Bicycle LOS	B		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1014
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	249	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	2.16
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.43973	PF Power Coefficient (p)	0.72475
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	507	-	-	52.9
2	Horizontal Curve	507	3000	0.0	52.9

Vehicle Results			
Average Speed, mi/h	52.9	Percent Followers, %	40.9
Segment Travel Time, minutes	0.22	Follower Density (FD), followers/mi/ln	1.9
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	249	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.50	Bicycle Effective Speed Factor	4.62
Bicycle LOS	B		

Segment 3

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	535
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	249	Opposing Demand Flow Rate, veh/h	457
Peak Hour Factor	0.90	Total Trucks, %	2.16
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.39377	Speed Power Coefficient (p)	0.48810
PF Slope Coefficient (m)	-1.37630	PF Power Coefficient (p)	0.75567
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	535	-	-	53.3

Vehicle Results

Average Speed, mi/h	53.3	Percent Followers, %	38.2
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	1.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	249	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.50	Bicycle Effective Speed Factor	4.62
Bicycle LOS	B		

Segment 4

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1494
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	259	Opposing Demand Flow Rate, veh/h	574
Peak Hour Factor	0.90	Total Trucks, %	1.63
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.42398	Speed Power Coefficient (p)	0.47280
PF Slope Coefficient (m)	-1.27644	PF Power Coefficient (p)	0.79034
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1494	-	-	68.1

Vehicle Results

Average Speed, mi/h	68.1	Percent Followers, %	35.5
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	259	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.52	Bicycle Effective Speed Factor	5.07

Bicycle LOS	C		

Segment 5

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5762
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	259	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	1.63
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.62977	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.20069	PF Power Coefficient (p)	0.78591
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5762	-	-	67.8

Vehicle Results

Average Speed, mi/h	67.8	Percent Followers, %	34.0
Segment Travel Time, minutes	0.97	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	259	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.52	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	383
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	262	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	1.89
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29361	PF Power Coefficient (p)	0.75772
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	383	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	37.4
Segment Travel Time, minutes	0.06	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	262	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.59	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1485
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	288	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	3.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57684	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28453	PF Power Coefficient (p)	0.76145
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1485	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.2
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	1.7

Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	288	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.99	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 8

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	426
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	214	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	6.47
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29307	PF Power Coefficient (p)	0.75839
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	426	-	-	68.1

Vehicle Results

Average Speed, mi/h	68.1	Percent Followers, %	33.1
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	214	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.87	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1212
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	208	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29321	PF Power Coefficient (p)	0.75821
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1212	-	-	68.2

Vehicle Results

Average Speed, mi/h	68.2	Percent Followers, %	32.5
Segment Travel Time, minutes	0.20	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	208	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.45	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1877
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	208	Opposing Demand Flow Rate, veh/h	281
Peak Hour Factor	0.90	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35595	Speed Power Coefficient (p)	0.51922
PF Slope Coefficient (m)	-1.22813	PF Power Coefficient (p)	0.81248
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1877	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	29.0
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	0.9
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	208	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.45	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1872
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	208	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58354	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26676	PF Power Coefficient (p)	0.76864
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1872	-	-	68.2

Vehicle Results

Average Speed, mi/h	68.2	Percent Followers, %	31.5
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	208	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.45	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 12

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3603
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	208	Opposing Demand Flow Rate, veh/h	281
Peak Hour Factor	0.90	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.37960	Speed Power Coefficient (p)	0.51922
PF Slope Coefficient (m)	-1.18421	PF Power Coefficient (p)	0.82919
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3603	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.5
Segment Travel Time, minutes	0.60	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	208	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.45	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 13

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1053
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	208	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29321	PF Power Coefficient (p)	0.75821
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1053	-	-	68.2

Vehicle Results

Average Speed, mi/h	68.2	Percent Followers, %	32.5
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	208	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.45	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 14

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1120
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	208	Opposing Demand Flow Rate, veh/h	281
Peak Hour Factor	0.90	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34605	Speed Power Coefficient (p)	0.51922
PF Slope Coefficient (m)	-1.25395	PF Power Coefficient (p)	0.80148
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1120	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	29.9
Segment Travel Time, minutes	0.19	Follower Density (FD), followers/mi/ln	0.9
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	208	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.45	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 15

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1272
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	250	Opposing Demand Flow Rate, veh/h	328
Peak Hour Factor	0.90	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35992	Speed Power Coefficient (p)	0.50965
PF Slope Coefficient (m)	-1.26111	PF Power Coefficient (p)	0.79874
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1272	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	34.1
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	250	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.49	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 16

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	625
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	250	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29323	PF Power Coefficient (p)	0.75819
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	625	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	36.4
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	250	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.49	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 17

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1995
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	250	Opposing Demand Flow Rate, veh/h	328
Peak Hour Factor	0.90	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.37172	Speed Power Coefficient (p)	0.50965
PF Slope Coefficient (m)	-1.23065	PF Power Coefficient (p)	0.81147
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1995	-	-	68.3

Vehicle Results			
Average Speed, mi/h	68.3	Percent Followers, %	32.9
Segment Travel Time, minutes	0.33	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	250	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.49	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 18

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1399
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	250	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57524	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28884	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1399	-	-	67.9

Vehicle Results			
Average Speed, mi/h	67.9	Percent Followers, %	36.2
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	250	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.49	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 19

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1254
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	248	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	1.51
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29366	PF Power Coefficient (p)	0.75766
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1254	-	-	67.9

Vehicle Results			
Average Speed, mi/h	67.9	Percent Followers, %	36.2
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	248	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.47	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 20

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	1108
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	248	Opposing Demand Flow Rate, veh/h	522
Peak Hour Factor	0.90	Total Trucks, %	1.51
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.40913	Speed Power Coefficient (p)	0.47917
PF Slope Coefficient (m)	-1.28208	PF Power Coefficient (p)	0.78876

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1108	-	-	68.2

Vehicle Results

Average Speed, mi/h	68.2	Percent Followers, %	34.7
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	248	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.47	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 21

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2901
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	248	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	1.51
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.59854	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.23554	PF Power Coefficient (p)	0.77974
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2901	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	34.1
Segment Travel Time, minutes	0.49	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

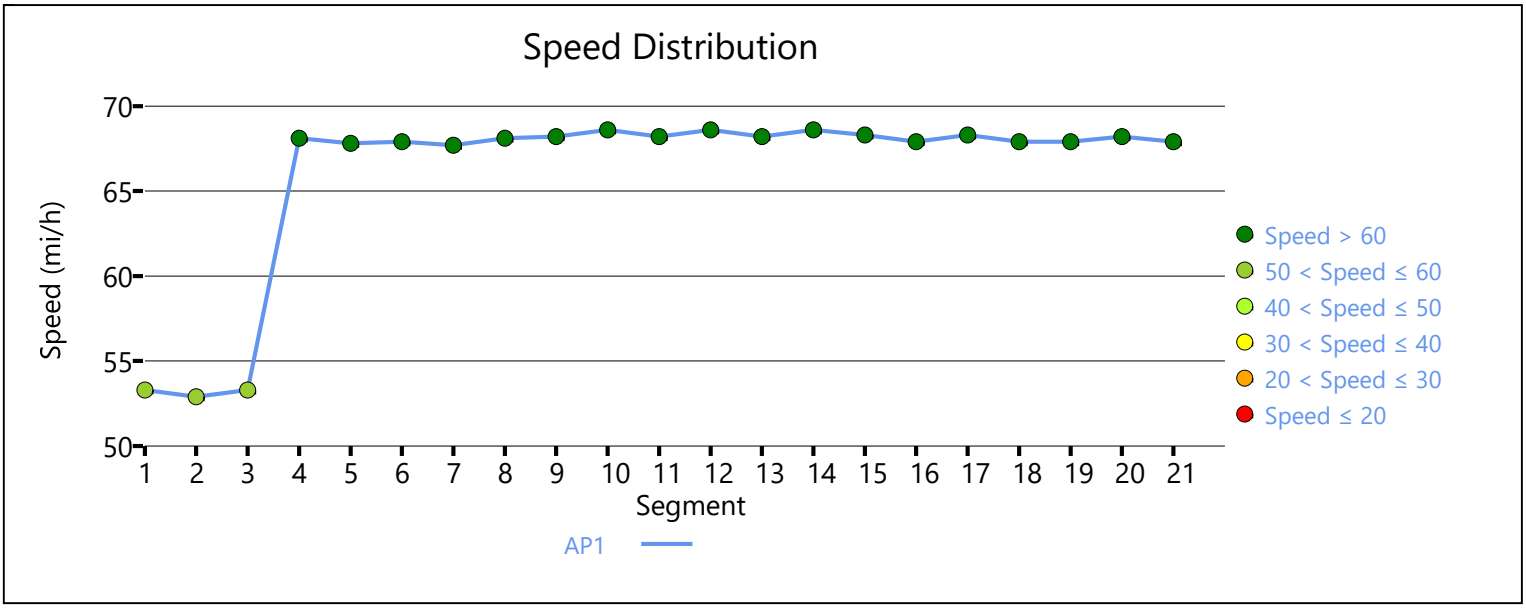
Bicycle Results

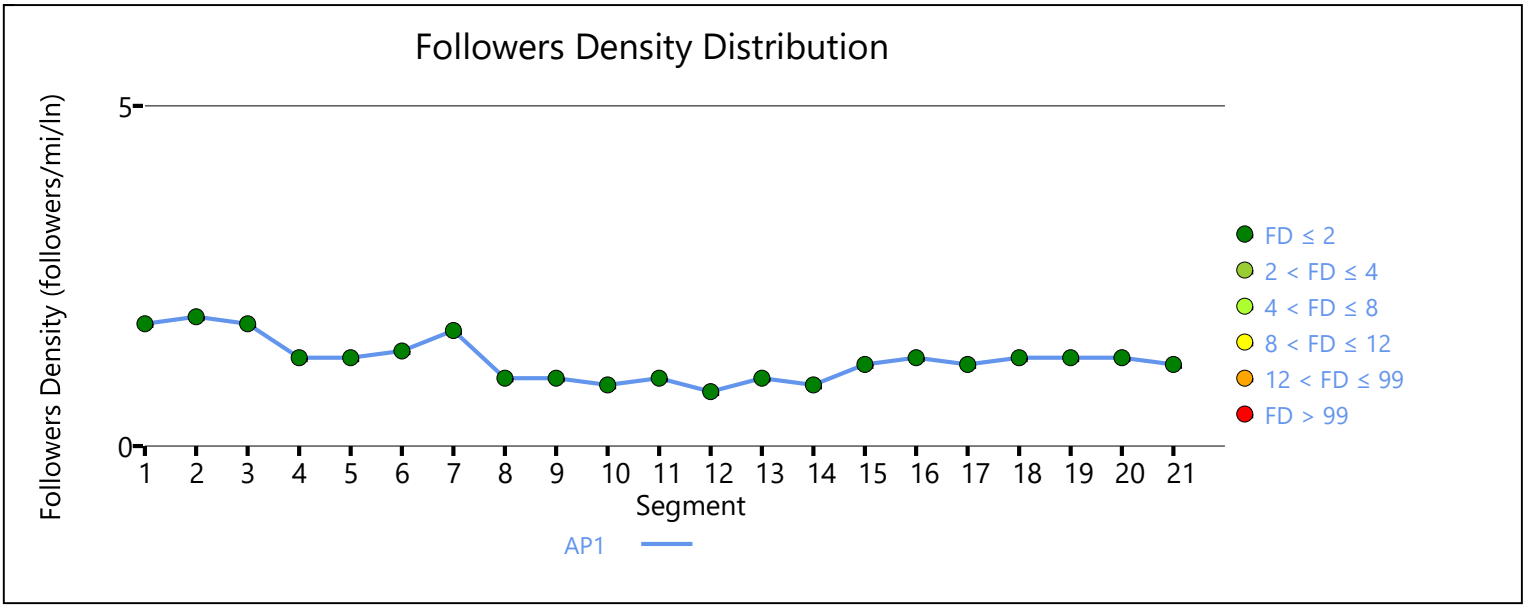
Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	248	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.47	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	341	0.14	1.2	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2029 NB
Jurisdiction	SDDOT	Time Analyzed	AM Peak
Project Description	SD 38 WB East of Hartford	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1727
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	177	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	8.97
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58112	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.27241	PF Power Coefficient (p)	0.76681
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1727	-	-	68.4

Vehicle Results

Average Speed, mi/h	68.4	Percent Followers, %	28.7
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	177	Bicycle Effective Width, ft	28
Bicycle LOS Score	3.69	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1676
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	177	Opposing Demand Flow Rate, veh/h	516
Peak Hour Factor	0.88	Total Trucks, %	8.97
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.41422	Speed Power Coefficient (p)	0.47998
PF Slope Coefficient (m)	-1.26276	PF Power Coefficient (p)	0.79739
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1676	-	-	68.7

Vehicle Results

Average Speed, mi/h	68.7	Percent Followers, %	27.2
Segment Travel Time, minutes	0.28	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	177	Bicycle Effective Width, ft	28
Bicycle LOS Score	3.69	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 3

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1864
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	188	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58341	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26572	PF Power Coefficient (p)	0.77025
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1864	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	29.4
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	188	Bicycle Effective Width, ft	24
Bicycle LOS Score	8.75	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	718
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	188	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29182	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	718	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	30.4
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	188	Bicycle Effective Width, ft	24
Bicycle LOS Score	8.75	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1738
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	188	Opposing Demand Flow Rate, veh/h	278
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35280	Speed Power Coefficient (p)	0.51981
PF Slope Coefficient (m)	-1.23200	PF Power Coefficient (p)	0.81205
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1738	-	-	68.8

Vehicle Results

Average Speed, mi/h	68.8	Percent Followers, %	27.1
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	188	Bicycle Effective Width, ft	24
Bicycle LOS Score	8.75	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	579
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	188	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29182	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	579	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	30.4
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	188	Bicycle Effective Width, ft	24
Bicycle LOS Score	8.75	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2262
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	172	Opposing Demand Flow Rate, veh/h	242
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34942	Speed Power Coefficient (p)	0.52824
PF Slope Coefficient (m)	-1.20658	PF Power Coefficient (p)	0.82267
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2262	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	24.6
Segment Travel Time, minutes	0.37	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	172	Bicycle Effective Width, ft	28
Bicycle LOS Score	8.50	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 8

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	980
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	172	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	980	-	-	68.5

Vehicle Results			
Average Speed, mi/h	68.5	Percent Followers, %	28.7
Segment Travel Time, minutes	0.16	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	172	Bicycle Effective Width, ft	28
Bicycle LOS Score	8.50	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 9

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	3667
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	172	Opposing Demand Flow Rate, veh/h	242
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36783	Speed Power Coefficient (p)	0.52824
PF Slope Coefficient (m)	-1.17532	PF Power Coefficient (p)	0.83427
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3667	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	23.7
Segment Travel Time, minutes	0.60	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	172	Bicycle Effective Width, ft	28
Bicycle LOS Score	8.50	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 10

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1846
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	172	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58311	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26629	PF Power Coefficient (p)	0.77017
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1846	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	27.8
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	172	Bicycle Effective Width, ft	28
Bicycle LOS Score	8.50	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2174
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	172	Opposing Demand Flow Rate, veh/h	242
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34810	Speed Power Coefficient (p)	0.52824
PF Slope Coefficient (m)	-1.20938	PF Power Coefficient (p)	0.82151
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2174	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	24.7
Segment Travel Time, minutes	0.36	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	172	Bicycle Effective Width, ft	28
Bicycle LOS Score	8.50	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 12

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1277
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	172	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1277	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.7
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	172	Bicycle Effective Width, ft	28
Bicycle LOS Score	8.50	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 13

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	779
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	172	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	779	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.7
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	172	Bicycle Effective Width, ft	28
Bicycle LOS Score	8.50	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	422
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	192	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	13.95
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29219	PF Power Coefficient (p)	0.75948
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	422	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	30.9
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	0.9
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	192	Bicycle Effective Width, ft	24
Bicycle LOS Score	7.06	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 15

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1478
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	177	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	19.53
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57671	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28298	PF Power Coefficient (p)	0.76370
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1478	-	-	68.4

Vehicle Results

Average Speed, mi/h	68.4	Percent Followers, %	29.0
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	177	Bicycle Effective Width, ft	28
Bicycle LOS Score	9.19	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 16

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	384
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	265	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.76
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29233	PF Power Coefficient (p)	0.75931
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	384	-	-	67.8

Vehicle Results

Average Speed, mi/h	67.8	Percent Followers, %	37.6
Segment Travel Time, minutes	0.06	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	265	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.63	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 17

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3732
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	256	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.60878	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.21846	PF Power Coefficient (p)	0.78615
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3732	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	34.1

Segment Travel Time, minutes	0.62	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	256	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.34	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 18

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1360
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	256	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57450	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29014	PF Power Coefficient (p)	0.76012
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1360	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	36.7
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	256	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.34	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 19

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1595
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	256	Opposing Demand Flow Rate, veh/h	483
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.40516	Speed Power Coefficient (p)	0.48439
PF Slope Coefficient (m)	-1.26342	PF Power Coefficient (p)	0.79785
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1595	-	-	68.2

Vehicle Results			
Average Speed, mi/h	68.2	Percent Followers, %	34.7
Segment Travel Time, minutes	0.27	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	256	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.34	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 20

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	595
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	256	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29239	PF Power Coefficient (p)	0.75923
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	595	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	36.8
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	256	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.34	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 21

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	958
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	245	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	10.81
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.43859	PF Power Coefficient (p)	0.72596
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	958	-	-	53.0

Vehicle Results

Average Speed, mi/h	53.0	Percent Followers, %	40.5
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	1.9
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	245	Bicycle Effective Width, ft	24
Bicycle LOS Score	5.27	Bicycle Effective Speed Factor	4.62
Bicycle LOS	E		

Segment 22

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1659
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	245	Opposing Demand Flow Rate, veh/h	405
Peak Hour Factor	0.88	Total Trucks, %	10.81
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.38697	Speed Power Coefficient (p)	0.49609
PF Slope Coefficient (m)	-1.34857	PF Power Coefficient (p)	0.76529
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1659	-	-	53.3

Vehicle Results

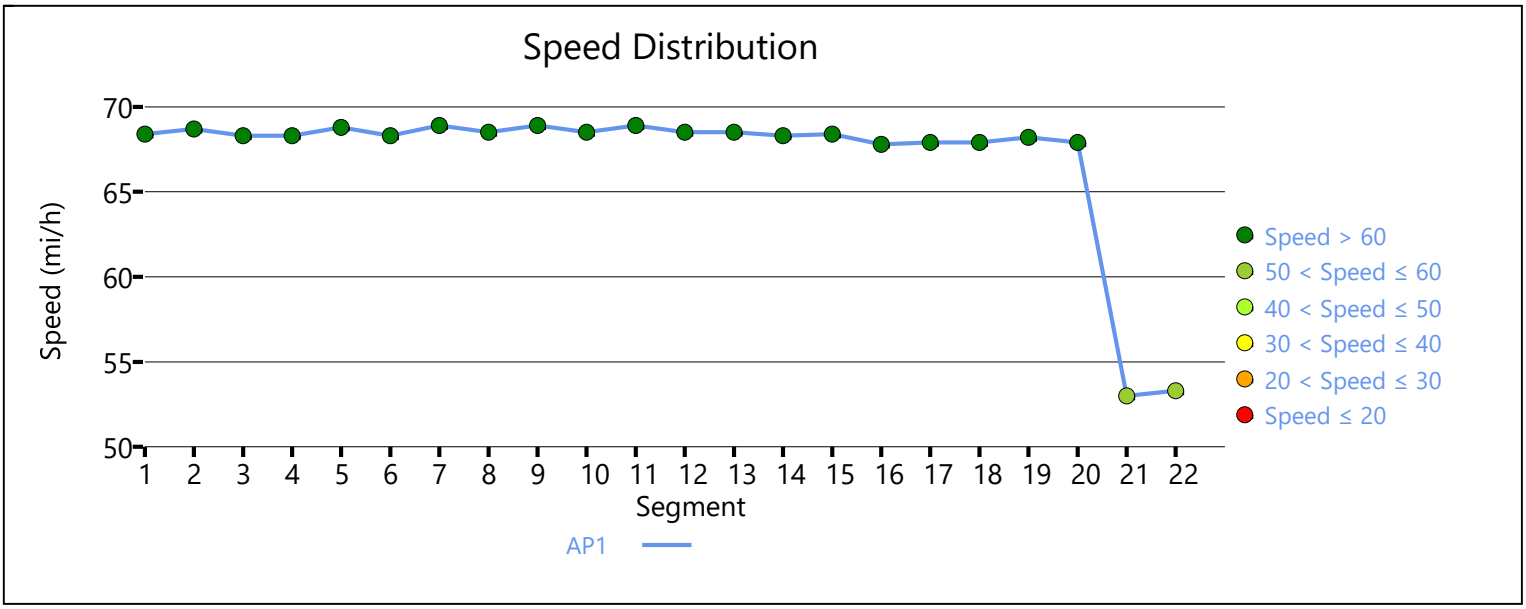
Average Speed, mi/h	53.3	Percent Followers, %	36.9
Segment Travel Time, minutes	0.35	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

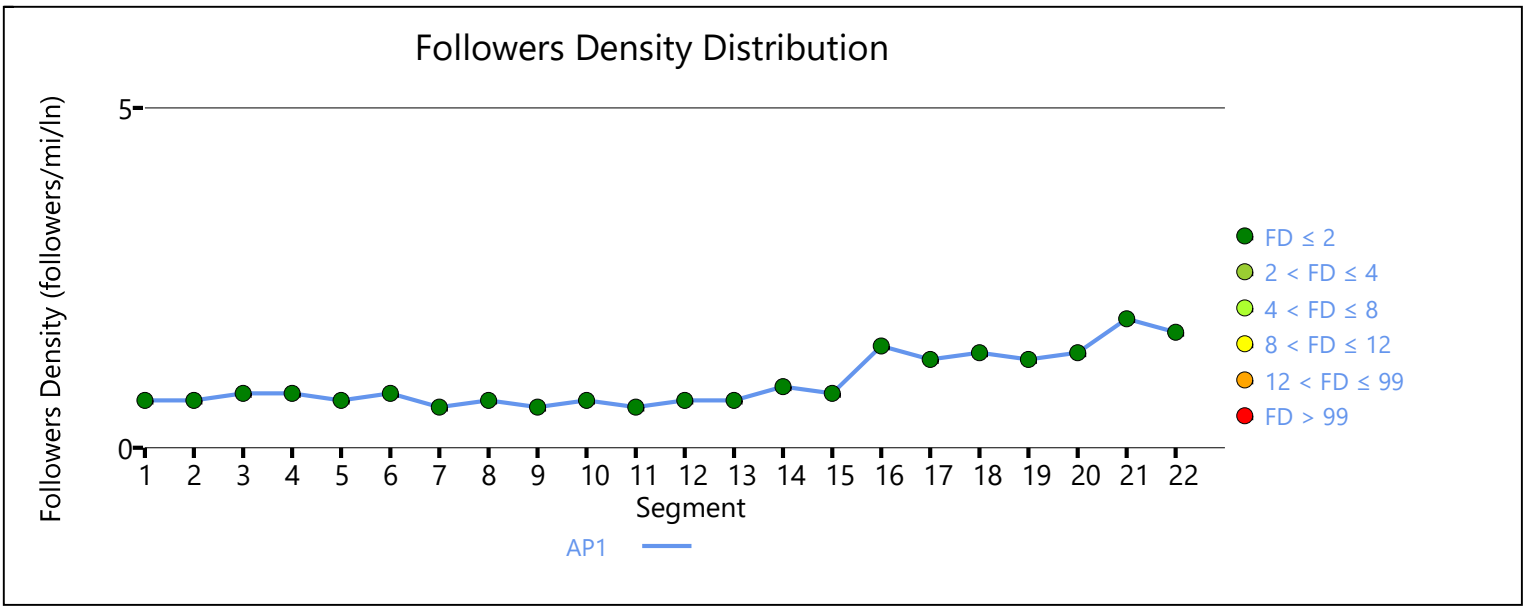
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	245	Bicycle Effective Width, ft	24
Bicycle LOS Score	5.27	Bicycle Effective Speed Factor	4.62
Bicycle LOS	E		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	279	0.10	0.9	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2029 NB
Jurisdiction	SDDOT	Time Analyzed	PM Peak
Project Description	SD 38 WB East of Hartford	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1727
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	534	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	8.97
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.31

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58112	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.27241	PF Power Coefficient (p)	0.76681
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1727	-	-	66.8

Vehicle Results

Average Speed, mi/h	66.8	Percent Followers, %	54.5
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	4.4
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	534	Bicycle Effective Width, ft	24
Bicycle LOS Score	5.29	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1676
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	534	Opposing Demand Flow Rate, veh/h	253
Peak Hour Factor	0.88	Total Trucks, %	8.97
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.31

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34379	Speed Power Coefficient (p)	0.52551
PF Slope Coefficient (m)	-1.23127	PF Power Coefficient (p)	0.81132
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1676	-	-	67.2

Vehicle Results

Average Speed, mi/h	67.2	Percent Followers, %	52.3
Segment Travel Time, minutes	0.28	Follower Density (FD), followers/mi/ln	4.2
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	534	Bicycle Effective Width, ft	24
Bicycle LOS Score	5.29	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Segment 3

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1864
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	335	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58341	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26572	PF Power Coefficient (p)	0.77025
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1864	-	-	67.5

Vehicle Results

Average Speed, mi/h	67.5	Percent Followers, %	42.0
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	2.1
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	335	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.04	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	718
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	335	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29182	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	718	-	-	67.5

Vehicle Results

Average Speed, mi/h	67.5	Percent Followers, %	43.0
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	2.1
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	335	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.04	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1738
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	335	Opposing Demand Flow Rate, veh/h	256
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34559	Speed Power Coefficient (p)	0.52497
PF Slope Coefficient (m)	-1.22813	PF Power Coefficient (p)	0.81352
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1738	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	39.6
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	2.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	335	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.04	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	579
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	335	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29182	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	579	-	-	67.5

Vehicle Results

Average Speed, mi/h	67.5	Percent Followers, %	43.0
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	2.1
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	335	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.04	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2262
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	288	Opposing Demand Flow Rate, veh/h	213
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33926	Speed Power Coefficient (p)	0.53581
PF Slope Coefficient (m)	-1.20084	PF Power Coefficient (p)	0.82484
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2262	-	-	68.2

Vehicle Results

Average Speed, mi/h	68.2	Percent Followers, %	34.9
Segment Travel Time, minutes	0.38	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	288	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 8

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	980
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	288	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	980	-	-	67.7

Vehicle Results			
Average Speed, mi/h	67.7	Percent Followers, %	39.4
Segment Travel Time, minutes	0.16	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	288	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 9

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	3667
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	288	Opposing Demand Flow Rate, veh/h	213
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35766	Speed Power Coefficient (p)	0.53581
PF Slope Coefficient (m)	-1.16975	PF Power Coefficient (p)	0.83655
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3667	-	-	68.2

Vehicle Results

Average Speed, mi/h	68.2	Percent Followers, %	33.8
Segment Travel Time, minutes	0.61	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	288	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 10

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1846
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	288	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58311	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26629	PF Power Coefficient (p)	0.77017
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1846	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	38.4
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	1.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	288	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2174
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	288	Opposing Demand Flow Rate, veh/h	213
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33794	Speed Power Coefficient (p)	0.53581
PF Slope Coefficient (m)	-1.20363	PF Power Coefficient (p)	0.82367
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2174	-	-	68.2

Vehicle Results

Average Speed, mi/h	68.2	Percent Followers, %	35.0
Segment Travel Time, minutes	0.36	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	288	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 12

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1277
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	288	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1277	-	-	67.7

Vehicle Results			
Average Speed, mi/h	67.7	Percent Followers, %	39.4
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	288	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 13

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	779
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	288	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	779	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.4
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	288	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	422
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	327	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	13.95
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.19

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29219	PF Power Coefficient (p)	0.75948
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	422	-	-	67.5

Vehicle Results

Average Speed, mi/h	67.5	Percent Followers, %	42.5
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	2.1
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	327	Bicycle Effective Width, ft	24
Bicycle LOS Score	7.33	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 15

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1478
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	297	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	19.53
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57671	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28298	PF Power Coefficient (p)	0.76370
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1478	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.8
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	297	Bicycle Effective Width, ft	24
Bicycle LOS Score	10.50	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 16

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	384
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	585	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.76
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.34

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29233	PF Power Coefficient (p)	0.75931
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	384	-	-	66.6

Vehicle Results			
Average Speed, mi/h	66.6	Percent Followers, %	57.7
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	5.1
Vehicle LOS	C		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	585	Bicycle Effective Width, ft	24
Bicycle LOS Score	7.03	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 17

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	3732
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	588	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.35

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.60878	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.21846	PF Power Coefficient (p)	0.78615
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3732	-	-	66.6

Vehicle Results			
Average Speed, mi/h	66.6	Percent Followers, %	55.2

Segment Travel Time, minutes	0.64	Follower Density (FD), followers/mi/ln	4.9
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	588	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.77	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 18

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1360
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	588	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.35

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57450	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29014	PF Power Coefficient (p)	0.76012
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1360	-	-	66.6

Vehicle Results

Average Speed, mi/h	66.6	Percent Followers, %	57.7
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	5.1
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	588	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.77	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 19

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1595
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	588	Opposing Demand Flow Rate, veh/h	265
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.35

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34603	Speed Power Coefficient (p)	0.52287
PF Slope Coefficient (m)	-1.23654	PF Power Coefficient (p)	0.80951
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1595	-	-	67.0

Vehicle Results			
Average Speed, mi/h	67.0	Percent Followers, %	55.2
Segment Travel Time, minutes	0.27	Follower Density (FD), followers/mi/ln	4.8
Vehicle LOS	C		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	588	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.77	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 20

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	595
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	588	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.35

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29239	PF Power Coefficient (p)	0.75923
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	595	-	-	66.6

Vehicle Results

Average Speed, mi/h	66.6	Percent Followers, %	57.8
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	5.1
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	588	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.77	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 21

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	958
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	467	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	10.81
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.27

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.43859	PF Power Coefficient (p)	0.72596
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	958	-	-	52.0

Vehicle Results

Average Speed, mi/h	52.0	Percent Followers, %	56.3
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	5.1
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	467	Bicycle Effective Width, ft	24
Bicycle LOS Score	5.60	Bicycle Effective Speed Factor	4.62
Bicycle LOS	F		

Segment 22

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1659
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	467	Opposing Demand Flow Rate, veh/h	255
Peak Hour Factor	0.88	Total Trucks, %	10.81
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.27

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.34386	Speed Power Coefficient (p)	0.52524
PF Slope Coefficient (m)	-1.29711	PF Power Coefficient (p)	0.78647
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1659	-	-	57.4

Vehicle Results

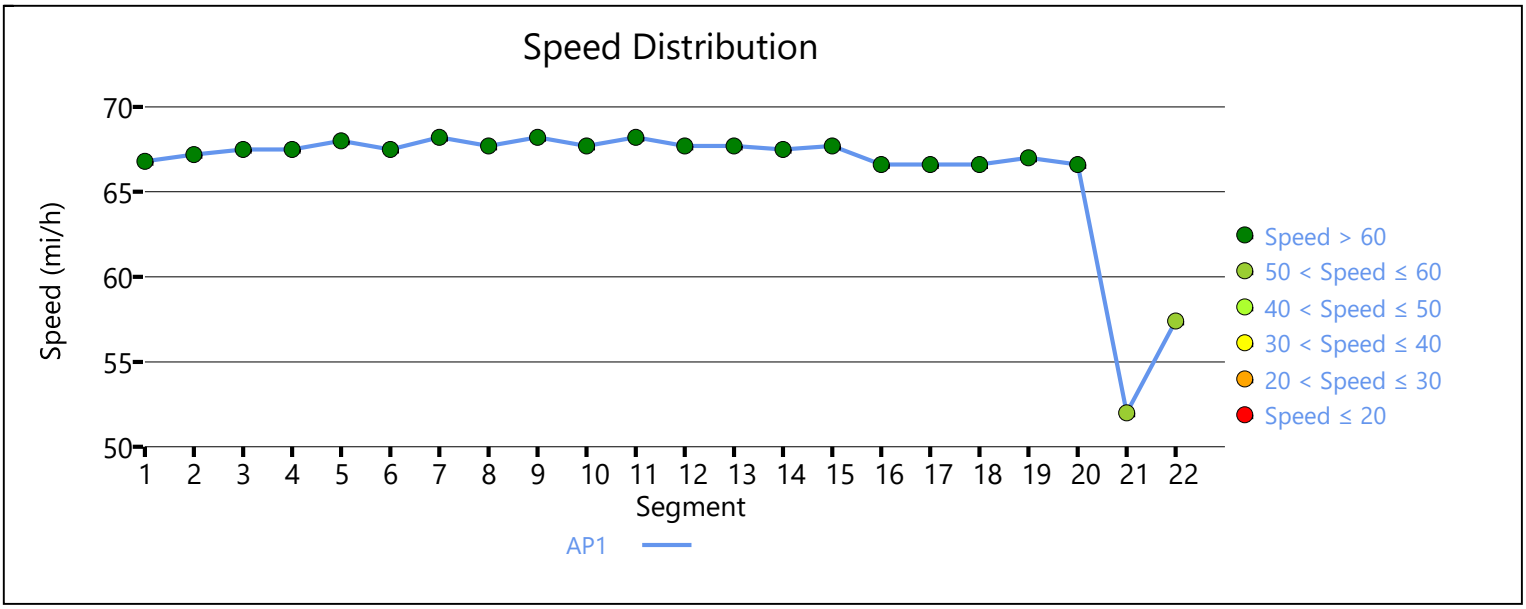
Average Speed, mi/h	57.4	Percent Followers, %	51.0
Segment Travel Time, minutes	0.33	Follower Density (FD), followers/mi/ln	4.1
Vehicle LOS	C		

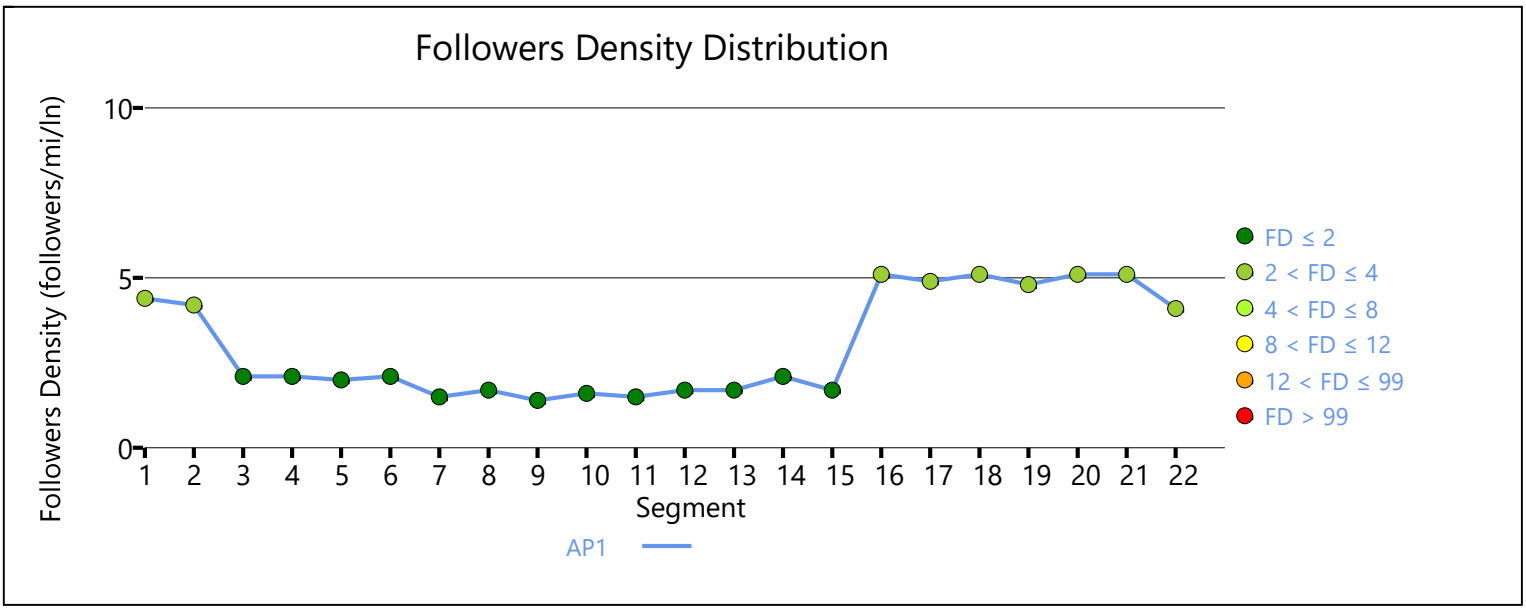
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	467	Bicycle Effective Width, ft	24
Bicycle LOS Score	5.60	Bicycle Effective Speed Factor	4.62
Bicycle LOS	F		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	562	0.34	2.9	B





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2029 NB
Jurisdiction	SDDOT	Time Analyzed	AM Peak
Project Description	West of Hartford SD 38 EB	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1069
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	161	Opposing Demand Flow Rate, veh/h	111
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.28164	Speed Power Coefficient (p)	0.56932
PF Slope Coefficient (m)	-1.21358	PF Power Coefficient (p)	0.81482
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1069	-	-	69.1

Vehicle Results

Average Speed, mi/h	69.1	Percent Followers, %	24.0
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	161	Bicycle Effective Width, ft	29
Bicycle LOS Score	2.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	664
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	161	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	664	-	-	68.6

Vehicle Results			
Average Speed, mi/h	68.6	Percent Followers, %	27.7
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	161	Bicycle Effective Width, ft	29
Bicycle LOS Score	2.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 3

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	1871
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	161	Opposing Demand Flow Rate, veh/h	111
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.29144	Speed Power Coefficient (p)	0.56932
PF Slope Coefficient (m)	-1.18894	PF Power Coefficient (p)	0.82627
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1871	-	-	69.1

Vehicle Results

Average Speed, mi/h	69.1	Percent Followers, %	23.2
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	161	Bicycle Effective Width, ft	29
Bicycle LOS Score	2.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	925
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	161	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	925	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.7
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	161	Bicycle Effective Width, ft	29
Bicycle LOS Score	2.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4476
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	161	Opposing Demand Flow Rate, veh/h	111
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32493	Speed Power Coefficient (p)	0.56932
PF Slope Coefficient (m)	-1.13549	PF Power Coefficient (p)	0.84699
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4476	-	-	69.1

Vehicle Results

Average Speed, mi/h	69.1	Percent Followers, %	21.5
Segment Travel Time, minutes	0.74	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	161	Bicycle Effective Width, ft	29
Bicycle LOS Score	2.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	896
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	161	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	896	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.7
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	161	Bicycle Effective Width, ft	29
Bicycle LOS Score	2.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	743
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	161	Opposing Demand Flow Rate, veh/h	111
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.28164	Speed Power Coefficient (p)	0.56932
PF Slope Coefficient (m)	-1.21358	PF Power Coefficient (p)	0.81482
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	743	-	-	69.1

Vehicle Results

Average Speed, mi/h	69.1	Percent Followers, %	24.0
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	161	Bicycle Effective Width, ft	29
Bicycle LOS Score	2.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2717
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	163	Opposing Demand Flow Rate, veh/h	110
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30345	Speed Power Coefficient (p)	0.56980
PF Slope Coefficient (m)	-1.16341	PF Power Coefficient (p)	0.83725
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2717	-	-	69.1

Vehicle Results

Average Speed, mi/h	69.1	Percent Followers, %	22.4
Segment Travel Time, minutes	0.45	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	162	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.40	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1013
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	163	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29345	PF Power Coefficient (p)	0.75792
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1013	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.8
Segment Travel Time, minutes	0.17	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	162	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.40	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4569
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	163	Opposing Demand Flow Rate, veh/h	110
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32535	Speed Power Coefficient (p)	0.56980
PF Slope Coefficient (m)	-1.13449	PF Power Coefficient (p)	0.84688
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	4569	-	-	69.1

Vehicle Results

Average Speed, mi/h	69.1	Percent Followers, %	21.6
Segment Travel Time, minutes	0.75	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	162	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.40	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5676
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	175	Opposing Demand Flow Rate, veh/h	110
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33632	Speed Power Coefficient (p)	0.56980
PF Slope Coefficient (m)	-1.12701	PF Power Coefficient (p)	0.84661
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5676	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	22.7
Segment Travel Time, minutes	0.93	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	175	Bicycle Effective Width, ft	28
Bicycle LOS Score	1.59	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 12

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	657
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	175	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29350	PF Power Coefficient (p)	0.75785
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	657	-	-	68.4

Vehicle Results

Average Speed, mi/h	68.4	Percent Followers, %	29.2
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	175	Bicycle Effective Width, ft	28
Bicycle LOS Score	1.59	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 13

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	6009
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	175	Opposing Demand Flow Rate, veh/h	110
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33941	Speed Power Coefficient (p)	0.56980
PF Slope Coefficient (m)	-1.12571	PF Power Coefficient (p)	0.84594

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6009	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	22.7
Segment Travel Time, minutes	0.99	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	175	Bicycle Effective Width, ft	28
Bicycle LOS Score	1.59	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	891
Measured FFS	Measured	Free-Flow Speed, mi/h	50.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	175	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	50.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.47375	PF Power Coefficient (p)	0.71164
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	891	-	-	48.4

Vehicle Results

Average Speed, mi/h	48.4	Percent Followers, %	34.7
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

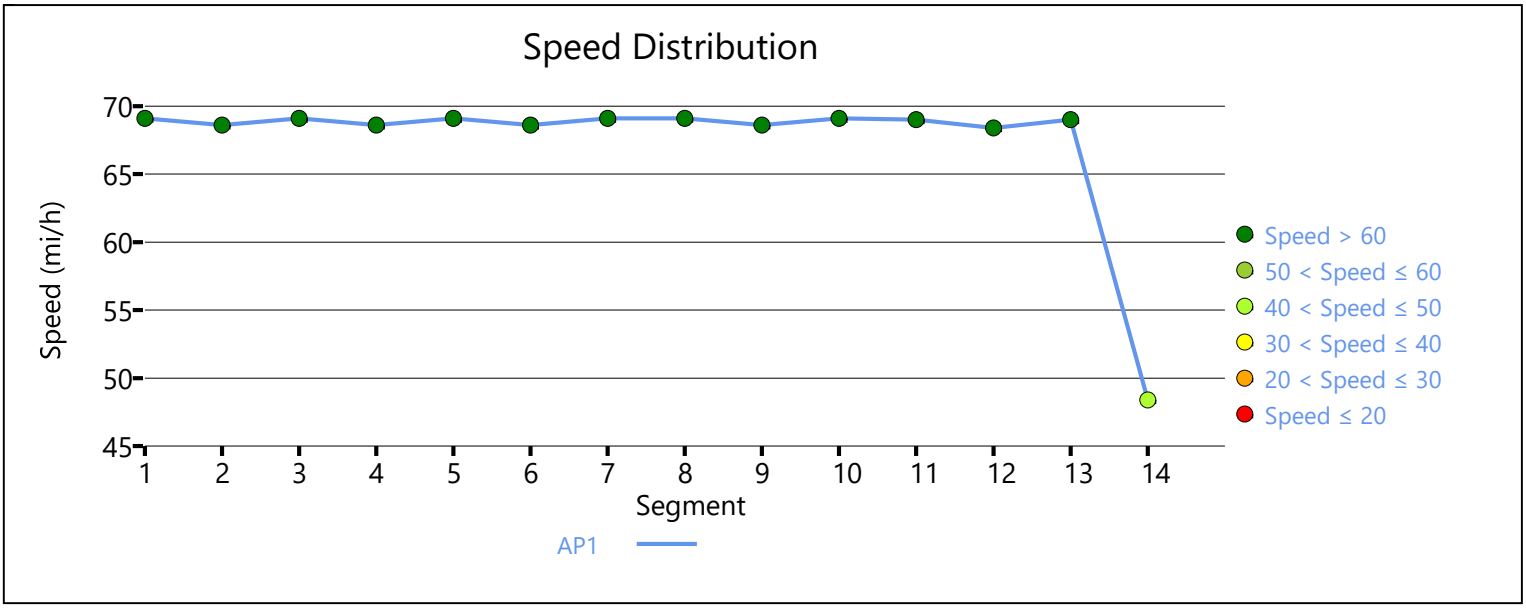
Bicycle Results

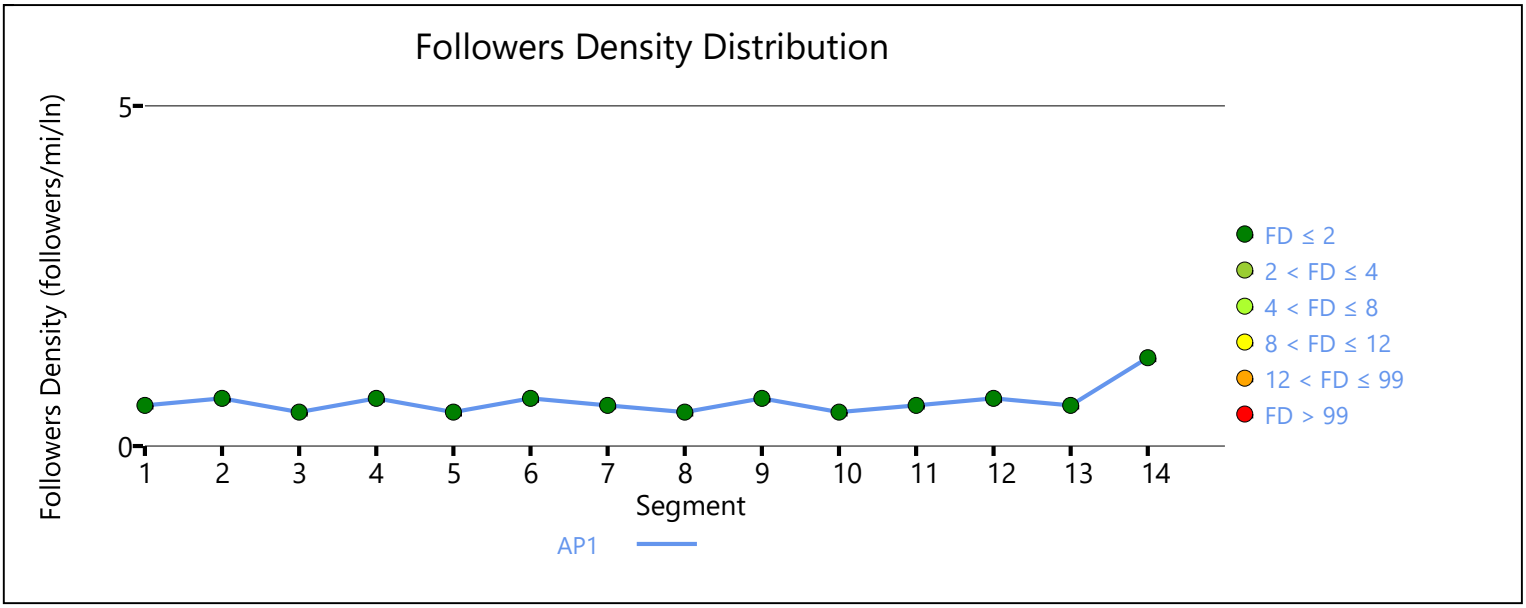
Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	175	Bicycle Effective Width, ft	28
Bicycle LOS Score	1.38	Bicycle Effective Speed Factor	4.42
Bicycle LOS	A		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	224	0.05	0.6	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2029 NB
Jurisdiction	SDDOT	Time Analyzed	PM Peak
Project Description	West of Hartford SD 38 EB	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1069
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	100	Opposing Demand Flow Rate, veh/h	184
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.31290	Speed Power Coefficient (p)	0.54385
PF Slope Coefficient (m)	-1.23457	PF Power Coefficient (p)	0.80823
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1069	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	17.5
Segment Travel Time, minutes	0.17	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	100	Bicycle Effective Width, ft	34
Bicycle LOS Score	0.35	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	664
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	100	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	664	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	20.2
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	100	Bicycle Effective Width, ft	34
Bicycle LOS Score	0.35	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1871
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	100	Opposing Demand Flow Rate, veh/h	184
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32270	Speed Power Coefficient (p)	0.54385
PF Slope Coefficient (m)	-1.20944	PF Power Coefficient (p)	0.81940
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1871	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	16.7
Segment Travel Time, minutes	0.30	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	100	Bicycle Effective Width, ft	34
Bicycle LOS Score	0.35	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	925
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	100	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	925	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	20.2
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	100	Bicycle Effective Width, ft	34
Bicycle LOS Score	0.35	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4476
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	100	Opposing Demand Flow Rate, veh/h	184
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35619	Speed Power Coefficient (p)	0.54385
PF Slope Coefficient (m)	-1.15496	PF Power Coefficient (p)	0.83947
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4476	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	15.4
Segment Travel Time, minutes	0.73	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	100	Bicycle Effective Width, ft	34
Bicycle LOS Score	0.35	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	896
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	100	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	896	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	20.2
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	100	Bicycle Effective Width, ft	34
Bicycle LOS Score	0.35	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	743
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	100	Opposing Demand Flow Rate, veh/h	184
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.31290	Speed Power Coefficient (p)	0.54385
PF Slope Coefficient (m)	-1.23457	PF Power Coefficient (p)	0.80823
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	743	-	-	70.0

Vehicle Results

Average Speed, mi/h	70.0	Percent Followers, %	17.5
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	100	Bicycle Effective Width, ft	34
Bicycle LOS Score	0.35	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 8

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	2717
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	105	Opposing Demand Flow Rate, veh/h	0
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.19461	Speed Power Coefficient (p)	0.67576
PF Slope Coefficient (m)	-1.07584	PF Power Coefficient (p)	0.86675
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2717	-	-	69.9

Vehicle Results			
Average Speed, mi/h	69.9	Percent Followers, %	14.1
Segment Travel Time, minutes	0.44	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	105	Bicycle Effective Width, ft	34
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 9

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1013
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	105	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29345	PF Power Coefficient (p)	0.75792
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1013	-	-	69.5

Vehicle Results

Average Speed, mi/h	69.5	Percent Followers, %	20.8
Segment Travel Time, minutes	0.17	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	105	Bicycle Effective Width, ft	34
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4569
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	105	Opposing Demand Flow Rate, veh/h	180
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35542	Speed Power Coefficient (p)	0.54521
PF Slope Coefficient (m)	-1.15329	PF Power Coefficient (p)	0.83962
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	4569	-	-	69.8

Vehicle Results

Average Speed, mi/h	69.8	Percent Followers, %	15.9
Segment Travel Time, minutes	0.74	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	105	Bicycle Effective Width, ft	34
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5676
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	118	Opposing Demand Flow Rate, veh/h	189
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36986	Speed Power Coefficient (p)	0.54251
PF Slope Coefficient (m)	-1.14767	PF Power Coefficient (p)	0.83845
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5676	-	-	69.5

Vehicle Results

Average Speed, mi/h	69.5	Percent Followers, %	17.4
Segment Travel Time, minutes	0.93	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	118	Bicycle Effective Width, ft	33
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 12

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	657
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	118	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29350	PF Power Coefficient (p)	0.75785
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	657	-	-	69.1

Vehicle Results

Average Speed, mi/h	69.1	Percent Followers, %	22.6
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	118	Bicycle Effective Width, ft	33
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 13

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	6009
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	118	Opposing Demand Flow Rate, veh/h	189
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.37295	Speed Power Coefficient (p)	0.54251
PF Slope Coefficient (m)	-1.14633	PF Power Coefficient (p)	0.83776

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6009	-	-	69.5

Vehicle Results

Average Speed, mi/h	69.5	Percent Followers, %	17.4
Segment Travel Time, minutes	0.98	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	118	Bicycle Effective Width, ft	33
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	891
Measured FFS	Measured	Free-Flow Speed, mi/h	50.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	118	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	50.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.47375	PF Power Coefficient (p)	0.71164
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	891	-	-	49.1

Vehicle Results

Average Speed, mi/h	49.1	Percent Followers, %	27.6
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

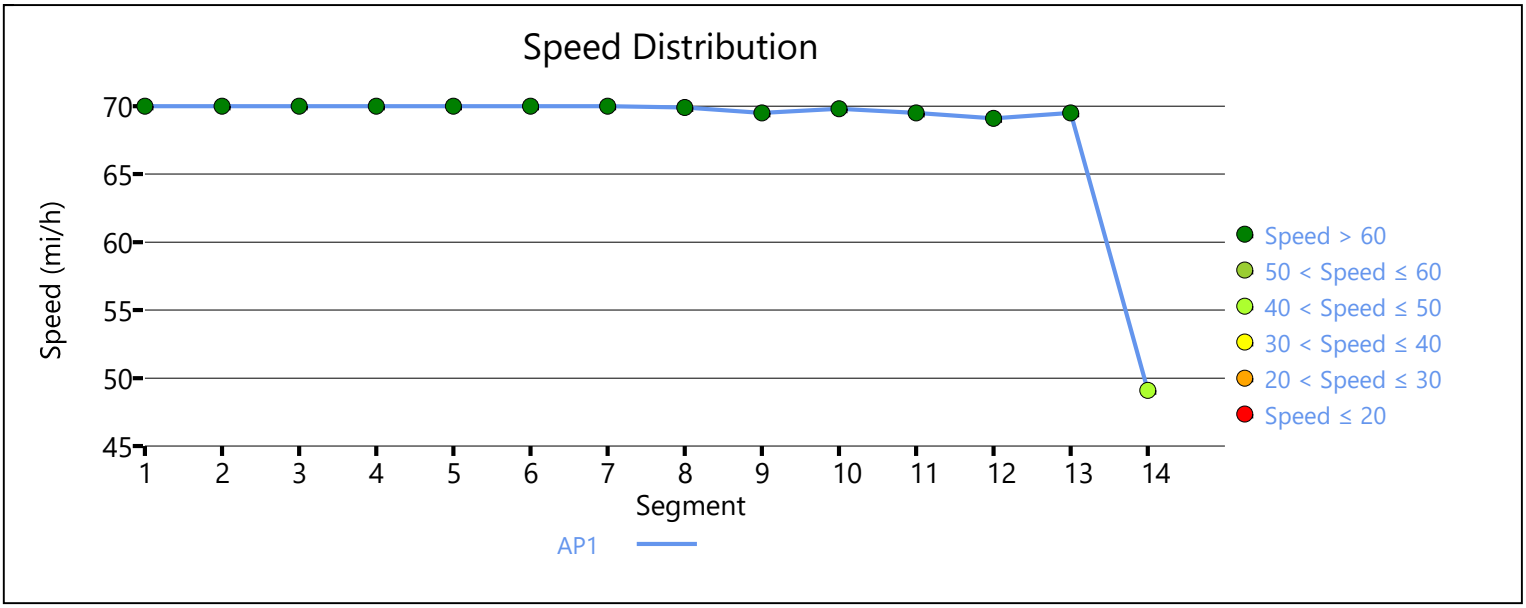
Bicycle Results

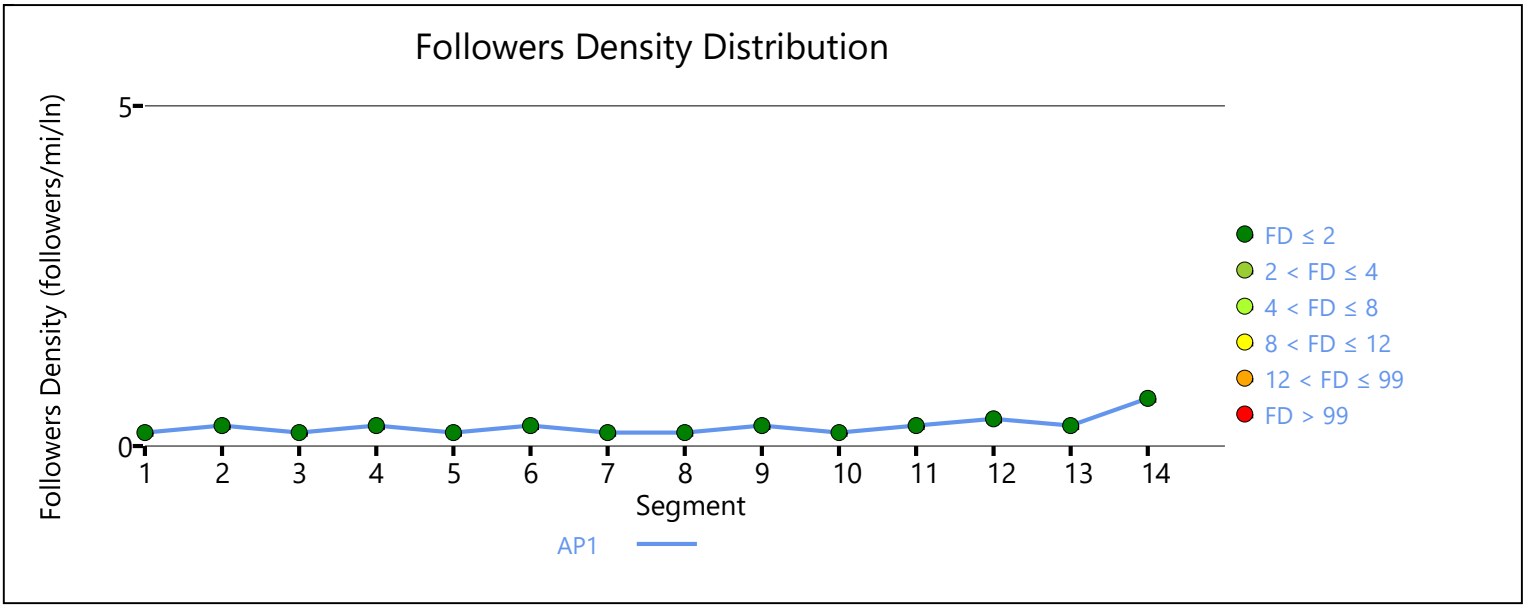
Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	118	Bicycle Effective Width, ft	33
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	4.42
Bicycle LOS	A		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	146	0.01	0.3	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/17/2023
Agency	HRG	Analysis Year	2029 NB
Jurisdiction	SDDOT	Time Analyzed	AM Peak
Project Description	WB 38 West of Hartford	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	10549
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	110	Opposing Demand Flow Rate, veh/h	175
Peak Hour Factor	0.88	Total Trucks, %	12.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.40338	Speed Power Coefficient (p)	0.54661
PF Slope Coefficient (m)	-1.15301	PF Power Coefficient (p)	0.81301
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	10549	-	-	69.6

Vehicle Results

Average Speed, mi/h	69.6	Percent Followers, %	17.5
Segment Travel Time, minutes	1.72	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	110	Bicycle Effective Width, ft	33
Bicycle LOS Score	3.49	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2793
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	110	Opposing Demand Flow Rate, veh/h	175
Peak Hour Factor	0.88	Total Trucks, %	12.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33277	Speed Power Coefficient (p)	0.54661
PF Slope Coefficient (m)	-1.17889	PF Power Coefficient (p)	0.83286
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2793	-	-	69.6

Vehicle Results			
Average Speed, mi/h	69.6	Percent Followers, %	17.1
Segment Travel Time, minutes	0.46	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	110	Bicycle Effective Width, ft	33
Bicycle LOS Score	3.49	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 3

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	3825
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	110	Opposing Demand Flow Rate, veh/h	163
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34052	Speed Power Coefficient (p)	0.55056
PF Slope Coefficient (m)	-1.15802	PF Power Coefficient (p)	0.83912
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3825	-	-	69.7

Vehicle Results

Average Speed, mi/h	69.7	Percent Followers, %	16.6
Segment Travel Time, minutes	0.62	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	110	Bicycle Effective Width, ft	33
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	791
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	110	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29355	PF Power Coefficient (p)	0.75779
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	791	-	-	69.3

Vehicle Results

Average Speed, mi/h	69.3	Percent Followers, %	21.6
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	110	Bicycle Effective Width, ft	33
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3414
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	110	Opposing Demand Flow Rate, veh/h	163
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33568	Speed Power Coefficient (p)	0.55056
PF Slope Coefficient (m)	-1.16442	PF Power Coefficient (p)	0.83709
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3414	-	-	69.7

Vehicle Results

Average Speed, mi/h	69.7	Percent Followers, %	16.8
Segment Travel Time, minutes	0.56	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	110	Bicycle Effective Width, ft	33
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	286
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	110	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.06

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29355	PF Power Coefficient (p)	0.75779
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	286	-	-	69.3

Vehicle Results

Average Speed, mi/h	69.3	Percent Followers, %	21.6
Segment Travel Time, minutes	0.05	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	110	Bicycle Effective Width, ft	33
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	463
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	111	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29353	PF Power Coefficient (p)	0.75782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	463	-	-	69.3

Vehicle Results

Average Speed, mi/h	69.3	Percent Followers, %	21.7
Segment Travel Time, minutes	0.08	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	111	Bicycle Effective Width, ft	33
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4822
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	111	Opposing Demand Flow Rate, veh/h	161
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35081	Speed Power Coefficient (p)	0.55093
PF Slope Coefficient (m)	-1.14681	PF Power Coefficient (p)	0.84146
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4822	-	-	69.6

Vehicle Results

Average Speed, mi/h	69.6	Percent Followers, %	16.5
Segment Travel Time, minutes	0.79	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	111	Bicycle Effective Width, ft	33
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	861
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	111	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29353	PF Power Coefficient (p)	0.75782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	861	-	-	69.3

Vehicle Results

Average Speed, mi/h	69.3	Percent Followers, %	21.7
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	111	Bicycle Effective Width, ft	33
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1556
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	111	Opposing Demand Flow Rate, veh/h	161
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30834	Speed Power Coefficient (p)	0.55093
PF Slope Coefficient (m)	-1.21738	PF Power Coefficient (p)	0.81494
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1556	-	-	69.6

Vehicle Results

Average Speed, mi/h	69.6	Percent Followers, %	18.4
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	111	Bicycle Effective Width, ft	33
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	799
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	111	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29353	PF Power Coefficient (p)	0.75782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	799	-	-	69.3

Vehicle Results

Average Speed, mi/h	69.3	Percent Followers, %	21.7
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	111	Bicycle Effective Width, ft	33
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 12

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	857
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	111	Opposing Demand Flow Rate, veh/h	161
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30393	Speed Power Coefficient (p)	0.55093
PF Slope Coefficient (m)	-1.22917	PF Power Coefficient (p)	0.80961
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	857	-	-	69.6

Vehicle Results			
Average Speed, mi/h	69.6	Percent Followers, %	18.8
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	111	Bicycle Effective Width, ft	33
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 13

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1288
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	111	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39677	PF Power Coefficient (p)	0.73640

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1288	-	-	59.3

Vehicle Results

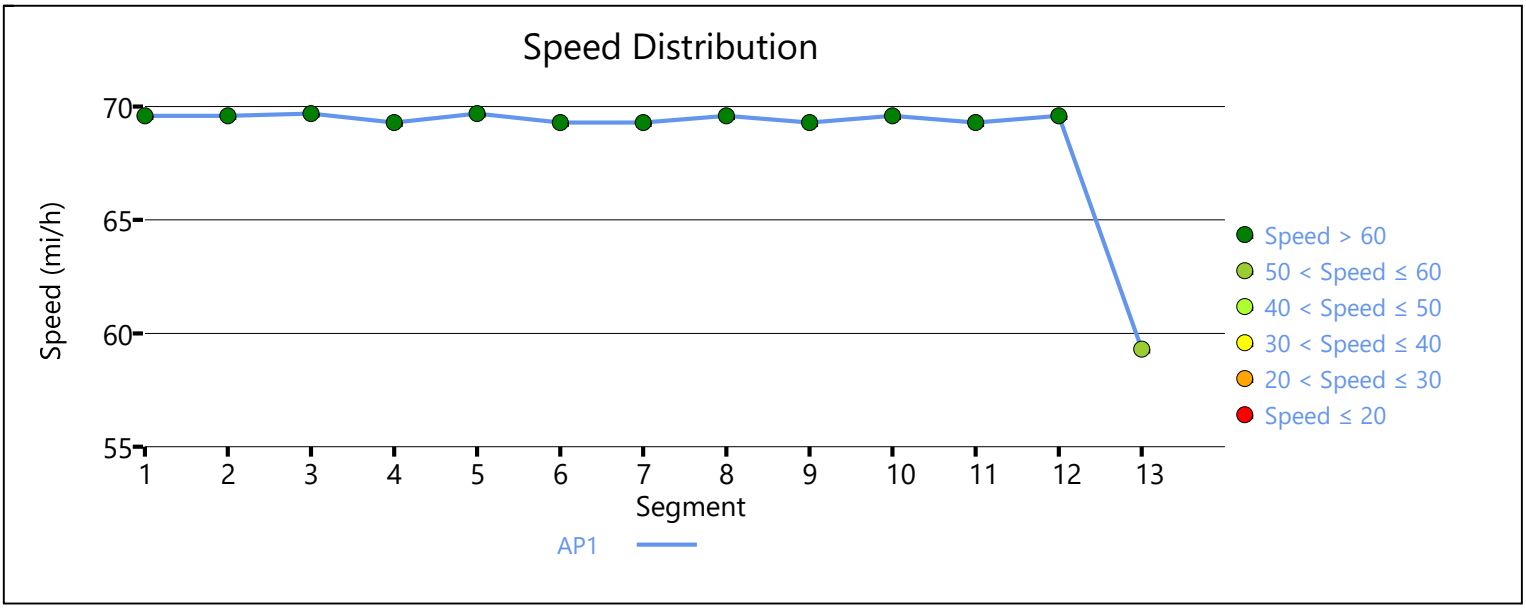
Average Speed, mi/h	59.3	Percent Followers, %	24.2
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

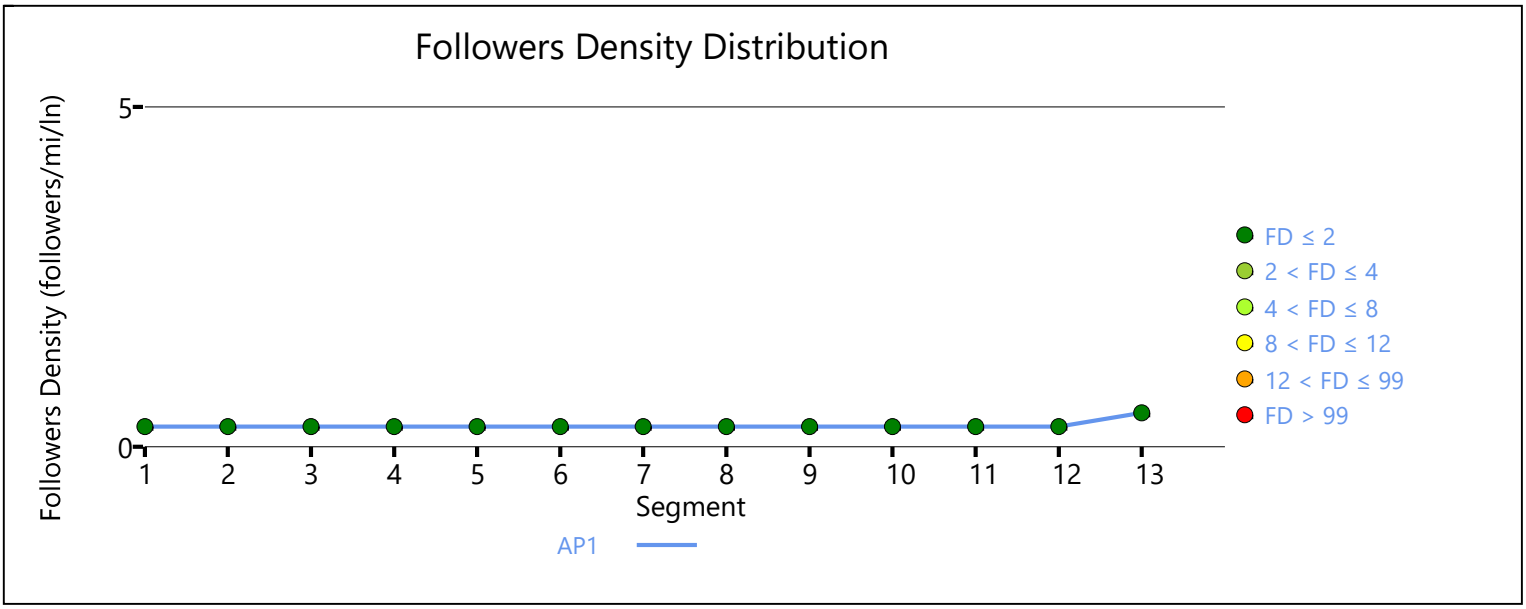
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	111	Bicycle Effective Width, ft	33
Bicycle LOS Score	0.00	Bicycle Effective Speed Factor	4.79
Bicycle LOS	A		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	149	0.01	0.3	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2029 NB
Jurisdiction	SDDOT	Time Analyzed	PM Peak
Project Description	WB 38 West of Hartford	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	10549
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	189	Opposing Demand Flow Rate, veh/h	118
Peak Hour Factor	0.88	Total Trucks, %	1.94
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.37894	Speed Power Coefficient (p)	0.56653
PF Slope Coefficient (m)	-1.13897	PF Power Coefficient (p)	0.81724
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	10549	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	25.3
Segment Travel Time, minutes	1.74	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	189	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.44	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2793
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	189	Opposing Demand Flow Rate, veh/h	118
Peak Hour Factor	0.88	Total Trucks, %	1.94
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30833	Speed Power Coefficient (p)	0.56653
PF Slope Coefficient (m)	-1.16438	PF Power Coefficient (p)	0.83687
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2793	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	25.0
Segment Travel Time, minutes	0.46	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	189	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.44	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3825
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	180	Opposing Demand Flow Rate, veh/h	105
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.31437	Speed Power Coefficient (p)	0.57223
PF Slope Coefficient (m)	-1.14124	PF Power Coefficient (p)	0.84536
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3825	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.5
Segment Travel Time, minutes	0.63	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	180	Bicycle Effective Width, ft	28
Bicycle LOS Score	1.44	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	791
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	180	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29358	PF Power Coefficient (p)	0.75776
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	791	-	-	68.4

Vehicle Results

Average Speed, mi/h	68.4	Percent Followers, %	29.7
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	180	Bicycle Effective Width, ft	28
Bicycle LOS Score	1.44	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3414
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	180	Opposing Demand Flow Rate, veh/h	105
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30953	Speed Power Coefficient (p)	0.57223
PF Slope Coefficient (m)	-1.14753	PF Power Coefficient (p)	0.84327
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3414	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.6
Segment Travel Time, minutes	0.56	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	180	Bicycle Effective Width, ft	28
Bicycle LOS Score	1.44	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	286
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	180	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29358	PF Power Coefficient (p)	0.75776
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	286	-	-	68.4

Vehicle Results

Average Speed, mi/h	68.4	Percent Followers, %	29.7
Segment Travel Time, minutes	0.05	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	180	Bicycle Effective Width, ft	28
Bicycle LOS Score	1.44	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	463
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	184	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29347	PF Power Coefficient (p)	0.75789
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	463	-	-	68.4

Vehicle Results

Average Speed, mi/h	68.4	Percent Followers, %	30.1
Segment Travel Time, minutes	0.08	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	184	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.73	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4822
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	184	Opposing Demand Flow Rate, veh/h	100
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32280	Speed Power Coefficient (p)	0.57423
PF Slope Coefficient (m)	-1.12885	PF Power Coefficient (p)	0.84841
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4822	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.6
Segment Travel Time, minutes	0.79	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	184	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.73	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	861
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	184	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29347	PF Power Coefficient (p)	0.75789
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	861	-	-	68.4

Vehicle Results

Average Speed, mi/h	68.4	Percent Followers, %	30.1
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	184	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.73	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1556
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	184	Opposing Demand Flow Rate, veh/h	100
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.28032	Speed Power Coefficient (p)	0.57423
PF Slope Coefficient (m)	-1.19816	PF Power Coefficient (p)	0.82111
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1556	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	25.8
Segment Travel Time, minutes	0.26	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	184	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.73	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	799
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	184	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29347	PF Power Coefficient (p)	0.75789
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	799	-	-	68.4

Vehicle Results

Average Speed, mi/h	68.4	Percent Followers, %	30.1
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	184	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.73	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 12

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	857
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	184	Opposing Demand Flow Rate, veh/h	100
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.27591	Speed Power Coefficient (p)	0.57423
PF Slope Coefficient (m)	-1.20974	PF Power Coefficient (p)	0.81565
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	857	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	26.2
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	184	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.73	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 13

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1288
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	184	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.11

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39671	PF Power Coefficient (p)	0.73647

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1288	-	-	58.4

Vehicle Results

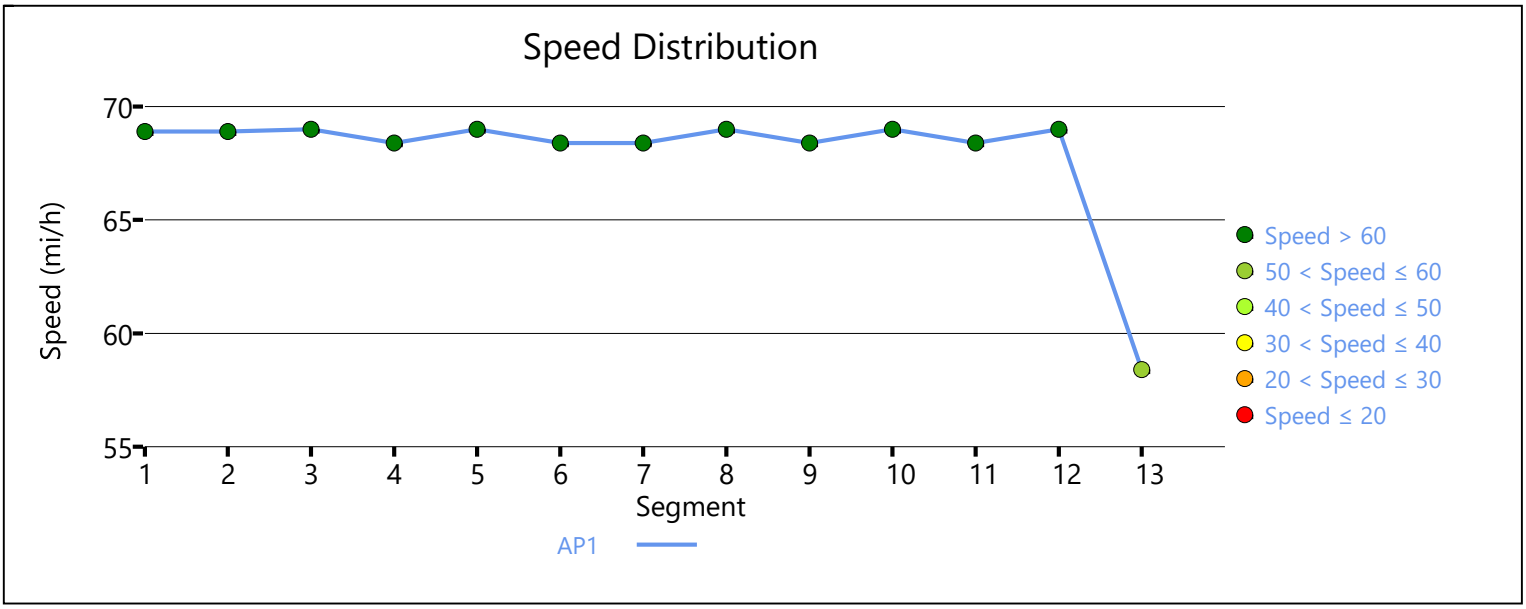
Average Speed, mi/h	58.4	Percent Followers, %	33.1
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

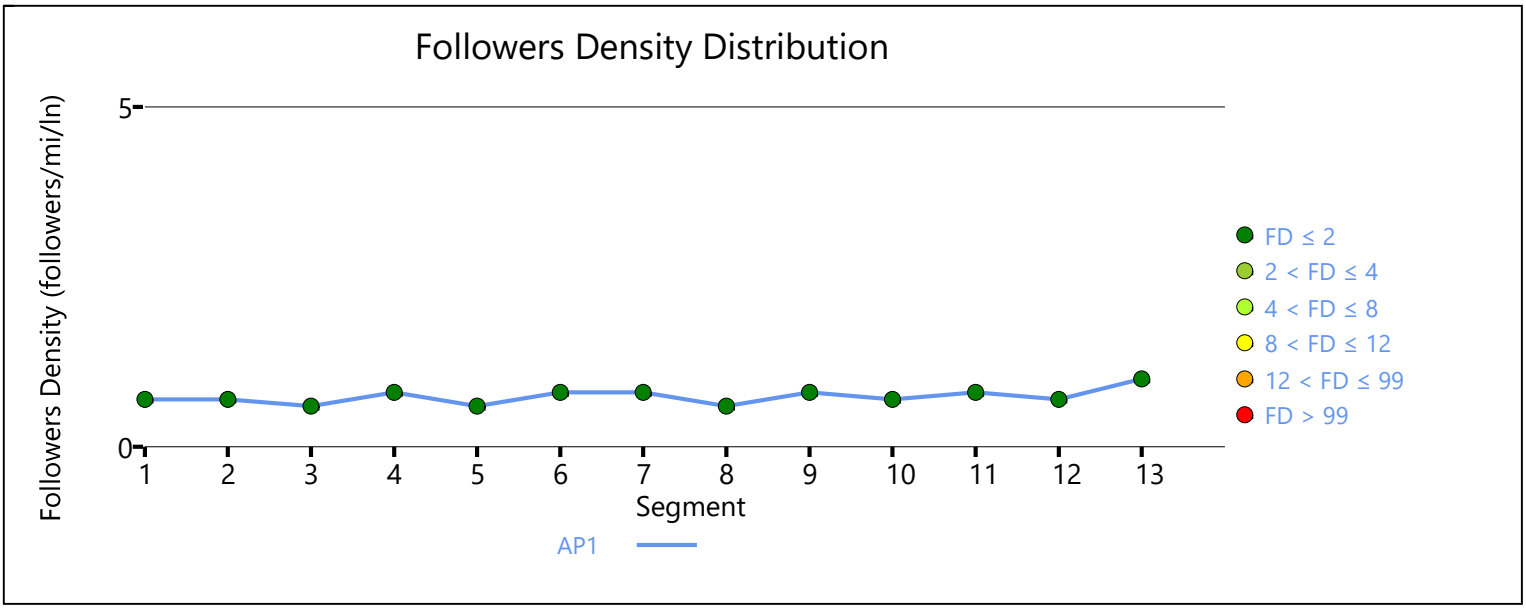
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	184	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.63	Bicycle Effective Speed Factor	4.79
Bicycle LOS	C		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	249	0.06	0.7	A





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HCS Two-Way Stop-Control Report

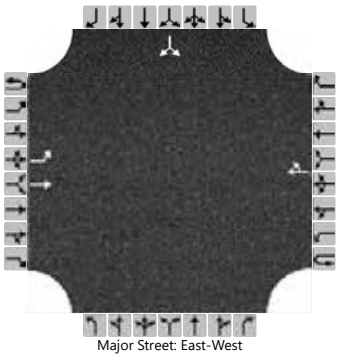
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/5/2023
Analysis Year	2040
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & SD 19
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	SD 19
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	T					TR							LR	
Volume (veh/h)		45	135				100	40						55		75
Percent Heavy Vehicles (%)		30												9		11
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage					Undivided											

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.40												6.49		6.31
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.47												3.58		3.40

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		49													141	
Capacity, c (veh/h)		1274													734	
v/c Ratio		0.04													0.19	
95% Queue Length, Q_{95} (veh)		0.1													0.7	
Control Delay (s/veh)		7.9													11.1	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)		2.0												11.1		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

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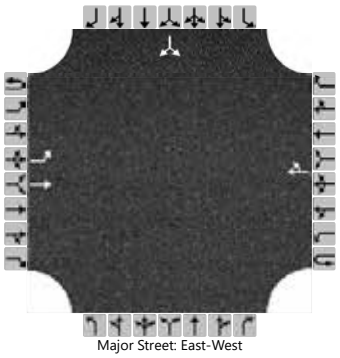
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & SD 19
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	SD 19
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	T					TR							LR	
Volume (veh/h)		70	100				140	65						30		40
Percent Heavy Vehicles (%)		2												10		14
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.12												6.50		6.34
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.22												3.59		3.43

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		76													76	
Capacity, c (veh/h)		1345													661	
v/c Ratio		0.06													0.12	
95% Queue Length, Q_{95} (veh)		0.2													0.4	
Control Delay (s/veh)		7.8													11.2	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)		3.2												11.2		
Approach LOS		A												B		

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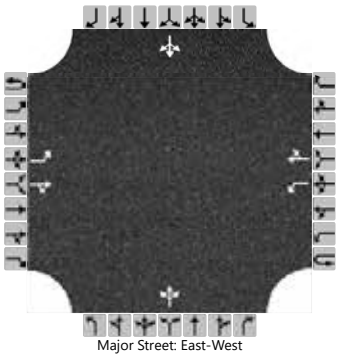
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 459th
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	459th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		0	180	6		1	130	0		10	0	6		7	0	0
Percent Heavy Vehicles (%)		3				3				13	0	0		0	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.23	6.50	6.20		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.62	4.00	3.30		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				1					17				8	
Capacity, c (veh/h)		1436				1364					667				613	
v/c Ratio		0.00				0.00					0.03				0.01	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.1				0.0	
Control Delay (s/veh)		7.5				7.6					10.5				10.9	
Level of Service (LOS)		A				A					B				B	
Approach Delay (s/veh)	0.0				0.1				10.5				10.9			
Approach LOS	A				A				B				B			

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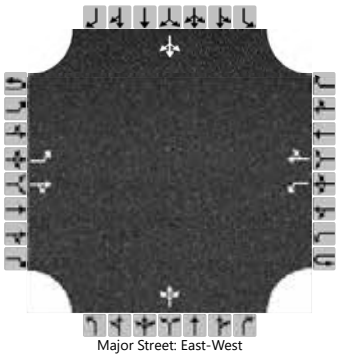
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 459th
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	459th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		0	120	7		10	205	1		10	0	3		1	1	0
Percent Heavy Vehicles (%)		0				0				13	0	0		0	100	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.23	6.50	6.20		7.10	7.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.62	4.00	3.30		3.50	4.90	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				11					14				2	
Capacity, c (veh/h)		1357				1458					609				488	
v/c Ratio		0.00				0.01					0.02				0.00	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.1				0.0	
Control Delay (s/veh)		7.7				7.5					11.0				12.4	
Level of Service (LOS)		A				A					B				B	
Approach Delay (s/veh)	0.0				0.3				11.0				12.4			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

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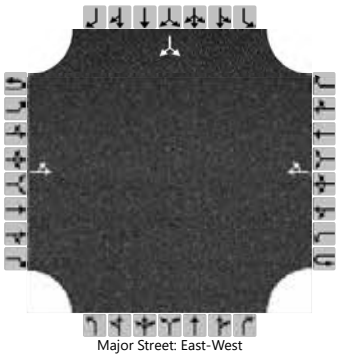
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 Expressway
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 Expressway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	190				140	0						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													0	
Capacity, c (veh/h)		1422													0	
v/c Ratio		0.00														
95% Queue Length, Q_{95} (veh)		0.0														
Control Delay (s/veh)		7.5	0.0													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)	0.0															
Approach LOS	A															

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HCS Two-Way Stop-Control Report

General Information

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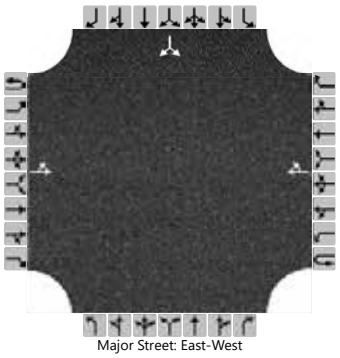
Agency/Co.	HRG
Date Performed	5/5/2023
Analysis Year	2040
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 Expressway
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 Expressway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	135				215	0						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													0	
Capacity, c (veh/h)		1328													0	
v/c Ratio		0.00														
95% Queue Length, Q_{95} (veh)		0.0														
Control Delay (s/veh)		7.7	0.0													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)	0.0															
Approach LOS	A															

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HCS Two-Way Stop-Control Report

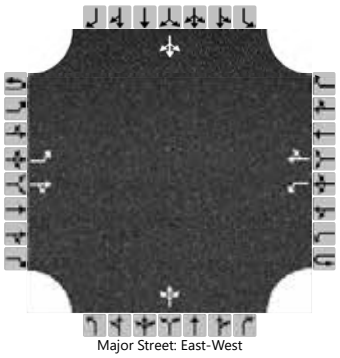
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/5/2023
Analysis Year	2040
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 463rd Ave / Western Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	463rd Ave / Western Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		7	150	65		50	95	25		50	65	75		35	65	4
Percent Heavy Vehicles (%)		3				3				14	2	6		0	7	33
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.24	6.52	6.26		7.10	6.57	6.53
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.63	4.02	3.35		3.50	4.06	3.60

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		8				54					207				113	
Capacity, c (veh/h)		1449				1328					541				442	
v/c Ratio		0.01				0.04					0.38				0.26	
95% Queue Length, Q_{95} (veh)		0.0				0.1					1.8				1.0	
Control Delay (s/veh)		7.5				7.8					15.7				15.9	
Level of Service (LOS)		A				A					C				C	
Approach Delay (s/veh)	0.2				2.3				15.7				15.9			
Approach LOS	A				A				C				C			

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HCS Two-Way Stop-Control Report

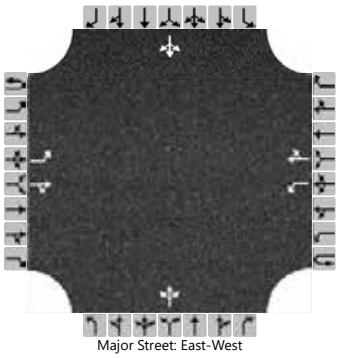
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/5/2023
Analysis Year	2040
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 463rd Ave / Western Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	463rd Ave / Western Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		15	105	45		95	165	50		55	70	125		45	80	20
Percent Heavy Vehicles (%)		22				3				0	11	4		0	4	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.32				4.13				7.10	6.61	6.24		7.10	6.54	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.40				2.23				3.50	4.10	3.34		3.50	4.04	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		16				103					272				158	
Capacity, c (veh/h)		1225				1410					480				353	
v/c Ratio		0.01				0.07					0.57				0.45	
95% Queue Length, Q_{95} (veh)		0.0				0.2					3.5				2.2	
Control Delay (s/veh)		8.0				7.8					21.9				23.2	
Level of Service (LOS)		A				A					C				C	
Approach Delay (s/veh)	0.7				2.4				21.9				23.2			
Approach LOS	A				A				C				C			

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HCS Two-Way Stop-Control Report

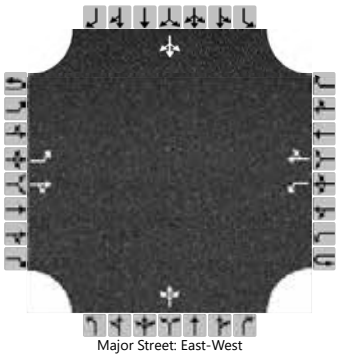
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/5/2023
Analysis Year	2040
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Main Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Main Ave (9th St)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		1	215	25		35	165	15		30	4	70		5	9	3
Percent Heavy Vehicles (%)		0				11				5	0	2		0	17	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage																

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.21				7.15	6.50	6.22		7.10	6.67	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.30				3.55	4.00	3.32		3.50	4.15	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		1				38					113				18	
Capacity, c (veh/h)		1389				1253					630				463	
v/c Ratio		0.00				0.03					0.18				0.04	
95% Queue Length, Q_{95} (veh)		0.0				0.1					0.6				0.1	
Control Delay (s/veh)		7.6				8.0					12.0				13.1	
Level of Service (LOS)		A				A					B				B	
Approach Delay (s/veh)	0.0				1.3				12.0				13.1			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

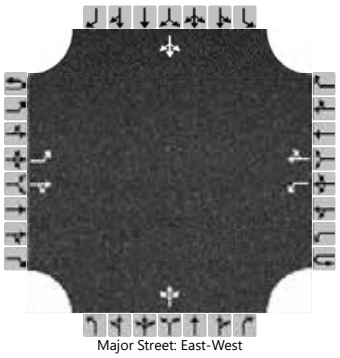
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/4/2023
Analysis Year	2040
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Main Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Main Ave (9th St)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		9	210	40		55	275	50		30	15	45		35	25	6
Percent Heavy Vehicles (%)		0				0				5	0	0		0	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.15	6.50	6.20		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.55	4.00	3.30		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		10				60					98				72	
Capacity, c (veh/h)		1217				1303					446				329	
v/c Ratio		0.01				0.05					0.22				0.22	
95% Queue Length, Q_{95} (veh)		0.0				0.1					0.8				0.8	
Control Delay (s/veh)		8.0				7.9					15.3				19.0	
Level of Service (LOS)		A				A					C				C	
Approach Delay (s/veh)	0.3				1.1				15.3				19.0			
Approach LOS	A				A				C				C			

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HCS Two-Way Stop-Control Report

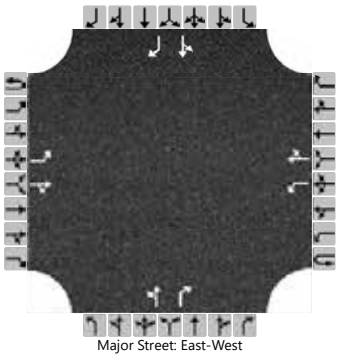
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/5/2023
Analysis Year	2040
Time Analyzed	AM
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Vandemark Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Vandemark Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	1		0	1	1
Configuration		L		TR		L		TR		LT		R		LT		R
Volume (veh/h)		20	310	9		7	210	20		7	4	10		35	1	20
Percent Heavy Vehicles (%)		0				0				40	0	0		0	0	7
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized										No				No		
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.50	6.50	6.20		7.10	6.50	6.27
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.86	4.00	3.30		3.50	4.00	3.36

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		22				8				12		11		39		22
Capacity, c (veh/h)		1327				1223				345		705		374		788
v/c Ratio		0.02				0.01				0.03		0.02		0.10		0.03
95% Queue Length, Q_{95} (veh)		0.0				0.0				0.1		0.0		0.3		0.1
Control Delay (s/veh)		7.8				8.0				15.8		10.2		15.7		9.7
Level of Service (LOS)		A				A				C		B		C		A
Approach Delay (s/veh)	0.5				0.2				13.1				13.6			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

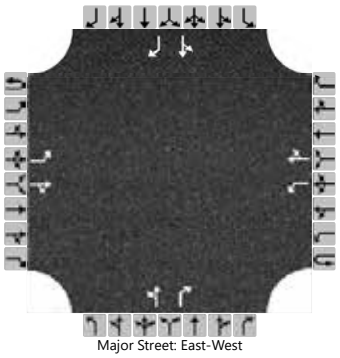
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/5/2023
Analysis Year	2040
Time Analyzed	PM
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Vandemark Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Vandemark Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	1		0	1	1
Configuration		L		TR		L		TR		LT		R		LT		R
Volume (veh/h)		20	220	3		5	400	35		0	0	8		25	0	20
Percent Heavy Vehicles (%)		0				0				0	0	100		0	0	7
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized										No				No		
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	7.20		7.10	6.50	6.27
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	4.20		3.50	4.00	3.36

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		22				5				0		9		27		22
Capacity, c (veh/h)		1100				1336				0		607		319		596
v/c Ratio		0.02				0.00						0.01		0.09		0.04
95% Queue Length, Q_{95} (veh)		0.1				0.0						0.0		0.3		0.1
Control Delay (s/veh)		8.3				7.7						11.0		17.3		11.3
Level of Service (LOS)		A				A						B		C		B
Approach Delay (s/veh)	0.7				0.1								14.6			
Approach LOS	A				A								B			

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HCS Two-Way Stop-Control Report

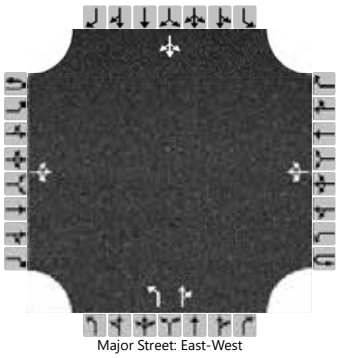
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/5/2023
Analysis Year	2040
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 2nd St
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	2nd St
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		1	1	0		0	1	0
Configuration			LTR				LTR			L		TR			LTR	
Volume (veh/h)		15	275	9		80	175	15		4	20	130		30	40	20
Percent Heavy Vehicles (%)		10				16				33	8	5		0	4	8
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.20				4.26				7.43	6.58	6.25		7.10	6.54	6.28
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.29				2.34				3.80	4.07	3.35		3.50	4.04	3.37

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		16				87				4		163			98	
Capacity, c (veh/h)		1292				1177				234		616			320	
v/c Ratio		0.01				0.07				0.02		0.26			0.31	
95% Queue Length, Q_{95} (veh)		0.0				0.2				0.1		1.1			1.3	
Control Delay (s/veh)		7.8	0.1	0.1		8.3	0.7	0.7		20.7		12.9			21.2	
Level of Service (LOS)		A	A	A		A	A	A		C		B			C	
Approach Delay (s/veh)	0.5				2.9				13.1				21.2			
Approach LOS	A				A				B				C			

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HCS Two-Way Stop-Control Report

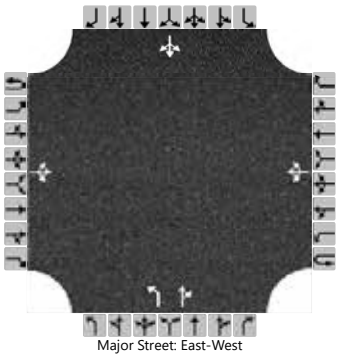
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/5/2023
Analysis Year	2040
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 2nd St
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	2nd St
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		1	1	0		0	1	0
Configuration			LTR				LTR			L		TR			LTR	
Volume (veh/h)		20	200	7		110	415	20		10	20	55		15	25	15
Percent Heavy Vehicles (%)		0				0				0	0	6		0	6	0
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.26		7.10	6.56	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.35		3.50	4.05	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		22				120				11		82			60	
Capacity, c (veh/h)		1078				1356				174		462			234	
v/c Ratio		0.02				0.09				0.06		0.18			0.26	
95% Queue Length, Q_{95} (veh)		0.1				0.3				0.2		0.6			1.0	
Control Delay (s/veh)		8.4	0.2	0.2		7.9	0.9	0.9		27.1		14.5			25.6	
Level of Service (LOS)		A	A	A		A	A	A		D		B			D	
Approach Delay (s/veh)	0.9				2.4				15.9				25.6			
Approach LOS	A				A				C				D			

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HCS Two-Way Stop-Control Report

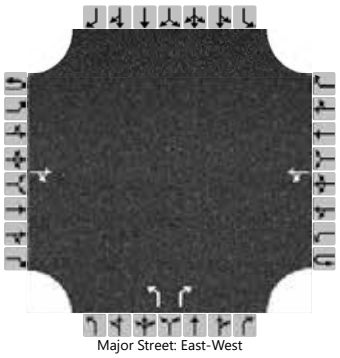
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2040
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & West Central HS Entrance
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	West Central HS Entrance
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		1	0	1		0	0	0
Configuration				TR		LT				L		R				
Volume (veh/h)			360	75		45	245			30		40				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						49				33		43				
Capacity, c (veh/h)						1100				340		628				
v/c Ratio						0.04				0.10		0.07				
95% Queue Length, Q_{95} (veh)						0.1				0.3		0.2				
Control Delay (s/veh)						8.4	0.4			16.7		11.2				
Level of Service (LOS)						A	A			C		B				
Approach Delay (s/veh)						1.7				13.5						
Approach LOS						A				B						

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HCS Two-Way Stop-Control Report

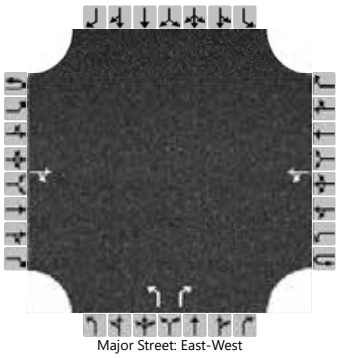
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2040
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & West Central HS Entrance
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	West Central HS Entrance
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		1	0	1		0	0	0
Configuration				TR		LT				L		R				
Volume (veh/h)			265	3		3	525			10		10				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						3				11		11				
Capacity, c (veh/h)						1282				325		754				
v/c Ratio						0.00				0.03		0.01				
95% Queue Length, Q_{95} (veh)						0.0				0.1		0.0				
Control Delay (s/veh)						7.8	0.0			16.5		9.8				
Level of Service (LOS)						A	A			C		A				
Approach Delay (s/veh)					0.1				13.2							
Approach LOS					A				B							

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HCS Two-Way Stop-Control Report

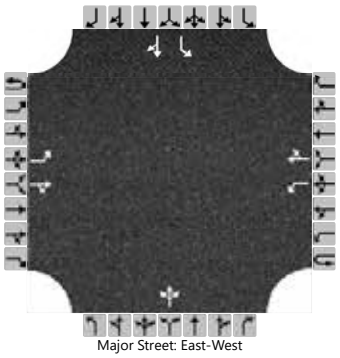
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2040
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Railroad Street
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Railroad St
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		1	1	0
Configuration		L		TR		L		TR			LTR			L		TR
Volume (veh/h)		3	390	0		15	235	80		1	0	25		125	3	4
Percent Heavy Vehicles (%)		0				0				0	0	15		0	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.35		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.44		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		3				16					28			136		8
Capacity, c (veh/h)		1228				1146					585			304		485
v/c Ratio		0.00				0.01					0.05			0.45		0.02
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.2			2.2		0.0
Control Delay (s/veh)		7.9				8.2					11.5			26.0		12.5
Level of Service (LOS)		A				A					B			D		B
Approach Delay (s/veh)	0.1				0.4				11.5				25.3			
Approach LOS	A				A				B				D			

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HCS Two-Way Stop-Control Report

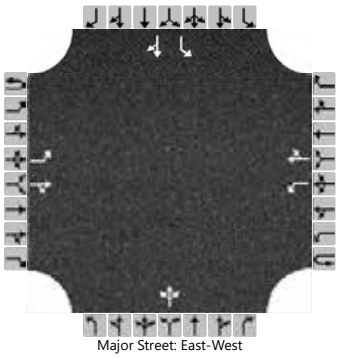
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/5/2023
Analysis Year	2040
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Railroad Street
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Railroad St
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		1	1	0
Configuration		L		TR		L		TR			LTR			L		TR
Volume (veh/h)		3	295	3		10	475	130		1	1	10		70	7	4
Percent Heavy Vehicles (%)		0				40				0	0	15		5	0	0
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.50				7.10	6.50	6.35		7.15	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.56				3.50	4.00	3.44		3.55	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		3				11					13			76		12
Capacity, c (veh/h)		940				1050					533			234		319
v/c Ratio		0.00				0.01					0.02			0.33		0.04
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.1			1.4		0.1
Control Delay (s/veh)		8.8				8.5					11.9			27.6		16.7
Level of Service (LOS)		A				A					B			D		C
Approach Delay (s/veh)	0.1				0.1				11.9				26.2			
Approach LOS	A				A				B				D			

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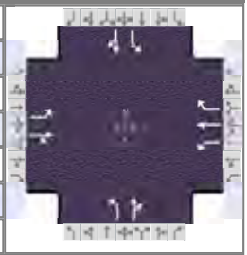
HCS Signalized Intersection Results Summary

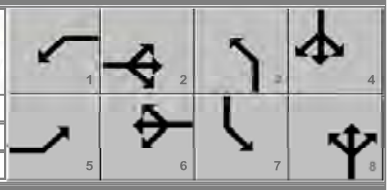
General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2040	Analysis Period	1> 7:15
Intersection	SD 38 & Mickelson Roa…	File Name	(10) SD38&Mickelson_AM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	135	355	30	35	140	190	35	55	50	215	20	195

Signal Information			
Cycle, s	65.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	2.5	3.0	17.5	2.5	2.5	18.0	
Yellow	3.5	0.0	4.0	3.5	0.0	4.0	
Red	1.0	0.0	1.0	1.0	0.0	1.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	4.0	1.1	3.0	1.1	4.0	1.1	4.0
Phase Duration, s	10.0	25.5	7.0	22.5	7.0	23.0	9.5	25.5
Change Period, ($Y+R_c$), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.3	3.1	3.3
Queue Clearance Time (g_s), s	6.0		3.0		3.0	20.0	7.0	22.5
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase Call Probability	0.93		0.50		0.50	1.00	0.99	1.00
Max Out Probability	1.00		1.00		1.00	1.00	1.00	1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	147	418		38	152	207	38	114		234	234	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1688	1747		1688	1772	1323	1688	1632		1688	1523	
Queue Service Time (g_s), s	4.0	14.0		1.0	4.5	8.8	1.0	3.5		5.0	8.1	
Cycle Queue Clearance Time (g_c), s	4.0	14.0		1.0	4.5	8.8	1.0	3.5		5.0	8.1	
Green Ratio (*g/C*)	0.36	0.32		0.31	0.27	0.27	0.32	0.28		0.35	0.32	
Capacity (*c*), veh/h	501	552		175	477	356	175	452		241	481	
Volume-to-Capacity Ratio (*X*)	0.293	0.759		0.217	0.319	0.580	0.217	0.253		0.971	0.486	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	2.4	10.7		0.7	3.4	5.6	0.7	2.2		9.5	4.7	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00		0.00	0.00	0.00	0.00	0.00		0.00	0.00	
Uniform Delay (d_1), s/veh	14.7	20.0		18.3	19.0	20.6	18.1	18.3		21.1	18.0	
Incremental Delay (d_2), s/veh	0.1	9.4		0.2	1.8	6.7	0.2	0.1		49.6	0.3	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	14.8	29.5		18.5	20.7	27.3	18.3	18.4		70.7	18.3	
Level of Service (LOS)	B	C		B	C	C	B	B		E	B	
Approach Delay, s/veh / LOS	25.7	C		23.9	C		18.4	B		44.5	D	
Intersection Delay, s/veh / LOS	30.1						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.91	B	1.91	B	2.10	B	1.91	B
Bicycle LOS Score / LOS	1.42	A	1.14	A	0.74	A	1.26	A

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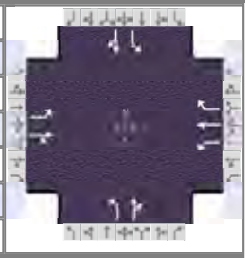
HCS Signalized Intersection Results Summary

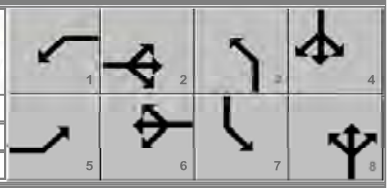
General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2040	Analysis Period	1> 7:15
Intersection	SD 38 & Mickelson Roa…	File Name	(10) SD38&Mickelson_PM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	160	165	20	110	425	225	15	65	35	210	15	185

Signal Information			
Cycle, s	70.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	4.8	1.7	21.0	1.4	0.6	17.0	
Yellow	3.5	0.0	4.0	3.5	3.5	4.0	
Red	1.0	0.0	1.0	1.0	1.0	1.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	4.0	1.1	3.0	1.1	4.0	1.1	4.0
Phase Duration, s	11.0	27.7	9.3	26.0	5.9	22.0	11.0	27.1
Change Period, ($Y+R_c$), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.3	3.1	3.3
Queue Clearance Time (g_s), s	6.9		5.4		2.5	19.0	8.5	24.1
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Phase Call Probability	0.97		0.90		0.27	1.00	0.99	1.00
Max Out Probability	1.00		1.00		1.00	1.00	1.00	1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	174	201		120	462	245	16	109		228	217	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1688	1738		1688	1772	1323	1688	1667		1688	1519	
Queue Service Time (g_s), s	4.9	6.2		3.4	17.3	11.1	0.5	3.7		6.5	8.0	
Cycle Queue Clearance Time (g_c), s	4.9	6.2		3.4	17.3	11.1	0.5	3.7		6.5	8.0	
Green Ratio (*g/C*)	0.39	0.32		0.37	0.30	0.30	0.26	0.24		0.36	0.32	
Capacity (*c*), veh/h	309	563		220	532	397	136	405		260	480	
Volume-to-Capacity Ratio (*X*)	0.563	0.357		0.544	0.869	0.616	0.120	0.268		0.879	0.452	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	3.2	4.6		2.2	14.1	7.0	0.3	2.5		7.8	4.7	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00		0.00	0.00	0.00	0.00	0.00		0.00	0.00	
Uniform Delay (d_1), s/veh	17.0	18.1		18.1	23.2	21.0	21.3	21.5		19.7	19.1	
Incremental Delay (d_2), s/veh	1.5	1.8		0.9	17.4	7.0	0.1	0.1		26.4	0.2	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	18.5	19.9		19.1	40.6	28.0	21.4	21.6		46.2	19.3	
Level of Service (LOS)	B	B		B	D	C	C	C		D	B	
Approach Delay, s/veh / LOS	19.2	B		33.7	C		21.6	C		33.1	C	
Intersection Delay, s/veh / LOS	29.6						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.91	B	1.91	B	2.11	B	1.91	B
Bicycle LOS Score / LOS	1.11	A	1.85	B	0.69	A	1.22	A

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HCS Two-Way Stop-Control Report

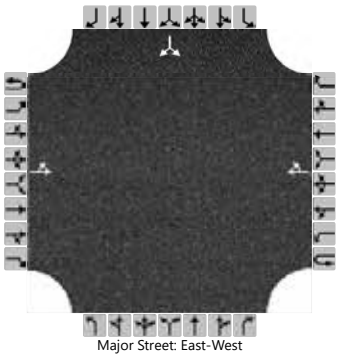
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2040
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD38 & 466th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	466th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		1	650				370	4						3		0
Percent Heavy Vehicles (%)		0												50		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.90		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.95		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		1													3	
Capacity, c (veh/h)		1163													187	
v/c Ratio		0.00													0.02	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		8.1	0.0												24.6	
Level of Service (LOS)		A	A												C	
Approach Delay (s/veh)	0.0												24.6			
Approach LOS	A												C			

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HCS Two-Way Stop-Control Report

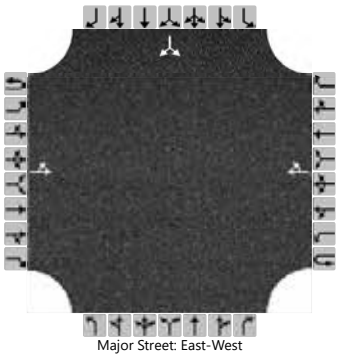
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2040
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD38 & 466th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	466th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	380				770	1						4		1
Percent Heavy Vehicles (%)		0												33		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.73		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.80		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													5	
Capacity, c (veh/h)		805													185	
v/c Ratio		0.00													0.03	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		9.5	0.0												25.0	
Level of Service (LOS)		A	A												D	
Approach Delay (s/veh)		0.0												25.0		
Approach LOS		A												D		

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HCS Two-Way Stop-Control Report

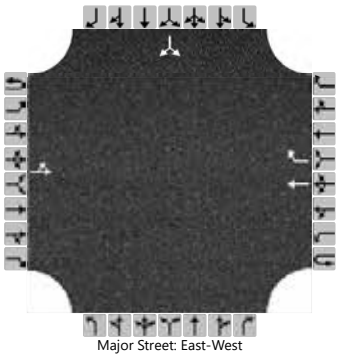
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2040
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 WB Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 WB Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		LT					T	R							LR	
Volume (veh/h)		35	615				215	15						15		165
Percent Heavy Vehicles (%)		0												56		12
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.96		6.32
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												4.00		3.41

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		38													196	
Capacity, c (veh/h)		1327													639	
v/c Ratio		0.03													0.31	
95% Queue Length, Q_{95} (veh)		0.1													1.3	
Control Delay (s/veh)		7.8	0.4												13.1	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)		0.8												13.1		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

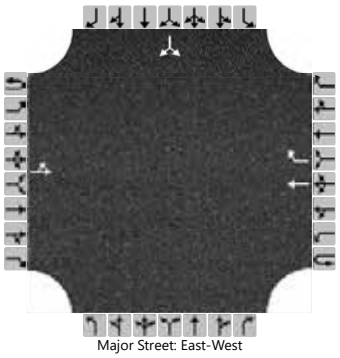
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2040
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 WB Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 WB Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		LT					T	R							LR	
Volume (veh/h)		25	355				355	30						25		415
Percent Heavy Vehicles (%)		0												6		2
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage							Undivided									

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.46		6.22
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.55		3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		27													478	
Capacity, c (veh/h)		1151													625	
v/c Ratio		0.02													0.76	
95% Queue Length, Q_{95} (veh)		0.1													7.0	
Control Delay (s/veh)		8.2	0.2												27.0	
Level of Service (LOS)		A	A												D	
Approach Delay (s/veh)		0.8												27.0		
Approach LOS		A												D		

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HCS Two-Way Stop-Control Report

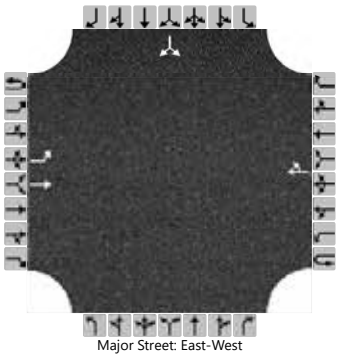
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2040
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 EB Ramp Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 EB Ramp Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	T					TR							LR	
Volume (veh/h)		365	265				210	20						4		25
Percent Heavy Vehicles (%)		1												33		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.11												6.73		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.21												3.80		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		397													32	
Capacity, c (veh/h)		1321													416	
v/c Ratio		0.30													0.08	
95% Queue Length, Q_{95} (veh)		1.3													0.2	
Control Delay (s/veh)		8.9													14.4	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)		5.1												14.4		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

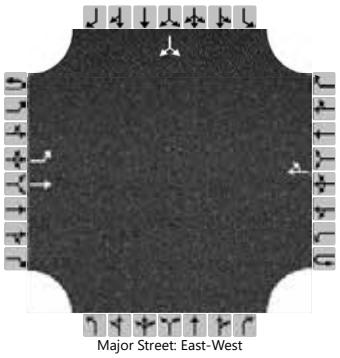
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2040
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 EB Ramp Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 EB Ramp Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	T					TR							LR	
Volume (veh/h)		165	225				355	25						35		35
Percent Heavy Vehicles (%)		12												36		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.22												6.76		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.31												3.82		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		179													76	
Capacity, c (veh/h)		1094													299	
v/c Ratio		0.16													0.25	
95% Queue Length, Q_{95} (veh)		0.6													1.0	
Control Delay (s/veh)		8.9													21.1	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)	3.8												21.1			
Approach LOS	A												C			

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HCS Two-Way Stop-Control Report

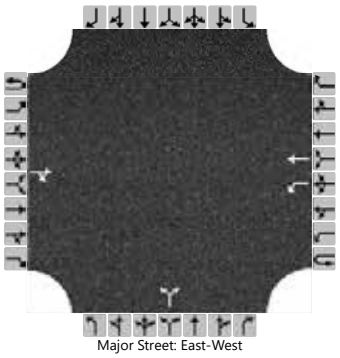
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2040
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 466th Ave (South)
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	466th Ave (South)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			260	15		15	200			20		15				
Percent Heavy Vehicles (%)						20				33		60				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.30				6.73		6.80				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.38				3.80		3.84				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						16					38					
Capacity, c (veh/h)						1166					510					
v/c Ratio						0.01					0.07					
95% Queue Length, Q_{95} (veh)						0.0					0.2					
Control Delay (s/veh)						8.1					12.6					
Level of Service (LOS)						A					B					
Approach Delay (s/veh)					0.6				12.6							
Approach LOS					A				B							

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HCS Two-Way Stop-Control Report

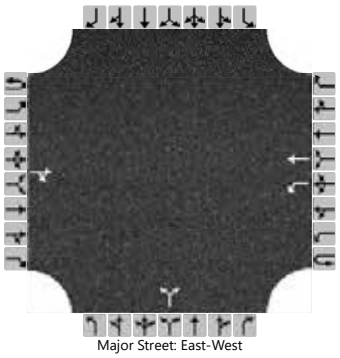
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2040
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 466th Ave (South)
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	466th Ave (South)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			235	20		15	340			35		20				
Percent Heavy Vehicles (%)						11				20		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.21				6.60		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.30				3.68		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						16					60					
Capacity, c (veh/h)						1236					477					
v/c Ratio						0.01					0.13					
95% Queue Length, Q_{95} (veh)						0.0					0.4					
Control Delay (s/veh)						8.0					13.6					
Level of Service (LOS)						A					B					
Approach Delay (s/veh)						0.3				13.6						
Approach LOS						A				B						

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HCS Two-Way Stop-Control Report

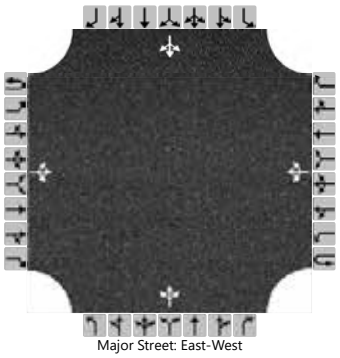
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2040
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 468th Avenue
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	468th Ave / County Highway 141
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		3	300	0		0	190	40		1	1	0		40	0	6
Percent Heavy Vehicles (%)		0				0				0	100	0		4	0	50
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	7.50	6.20		7.14	6.50	6.70
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.90	3.30		3.54	4.00	3.75

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		3				0					2				50	
Capacity, c (veh/h)		1327				1245					371				455	
v/c Ratio		0.00				0.00					0.01				0.11	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.4	
Control Delay (s/veh)		7.7	0.0	0.0		7.9	0.0	0.0			14.8				13.9	
Level of Service (LOS)		A	A	A		A	A	A			B				B	
Approach Delay (s/veh)	0.1				0.0				14.8				13.9			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

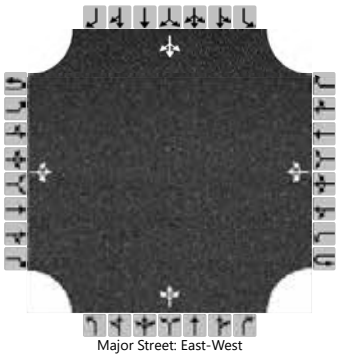
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2040
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 468th Avenue
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	468th Ave / County Highway 141
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	260	1		4	350	45		1	1	0		45	3	3
Percent Heavy Vehicles (%)		0				0				0	0	0		4	100	50
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.20		7.14	7.50	6.70
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.30		3.54	4.90	3.75

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				4					2				55	
Capacity, c (veh/h)		1141				1290					358				351	
v/c Ratio		0.00				0.00					0.01				0.16	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.6	
Control Delay (s/veh)		8.2	0.0	0.0		7.8	0.0	0.0			15.1				17.2	
Level of Service (LOS)		A	A	A		A	A	A			C				C	
Approach Delay (s/veh)	0.0				0.1				15.1				17.2			
Approach LOS	A				A				C				C			

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HCS Two-Way Stop-Control Report

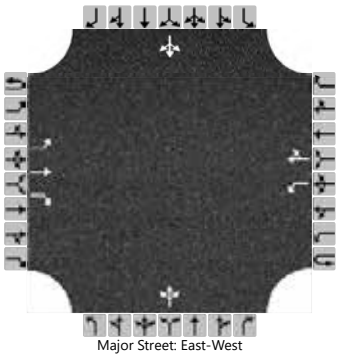
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2040
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 469th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	469th Ave / Co Hwy 139
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	1	0	1	1	0		0	1	0		0	1	0
Configuration		L	T	R		L		TR			LTR				LTR	
Volume (veh/h)		5	275	60		65	140	5		90	5	230		15	5	5
Percent Heavy Vehicles (%)		3				5				13	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No														
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.15				7.23	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.25				3.62	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		5				71					353				27	
Capacity, c (veh/h)		1416				1178					566				311	
v/c Ratio		0.00				0.06					0.62				0.09	
95% Queue Length, Q_{95} (veh)		0.0				0.2					4.3				0.3	
Control Delay (s/veh)		7.6				8.3					21.3				17.7	
Level of Service (LOS)		A				A					C				C	
Approach Delay (s/veh)		0.1				2.6				21.3				17.7		
Approach LOS		A				A				C				C		

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HCS Two-Way Stop-Control Report

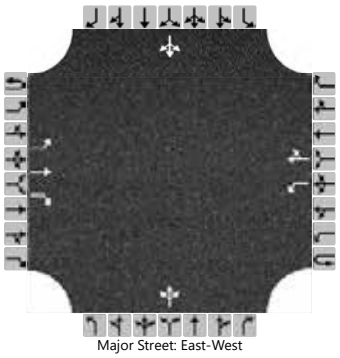
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2040
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 469th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	469th Ave / Co Hwy 139
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	1	0	1	1	0		0	1	0		0	1	0
Configuration		L	T	R		L		TR			LTR				LTR	
Volume (veh/h)		5	210	100		235	320	5		80	5	100		20	5	10
Percent Heavy Vehicles (%)		3				5				2	3	15		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No														
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.15				7.12	6.53	6.35		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.25				3.52	4.03	3.44		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		5				255					201				38	
Capacity, c (veh/h)		1200				1206					256				166	
v/c Ratio		0.00				0.21					0.79				0.23	
95% Queue Length, Q_{95} (veh)		0.0				0.8					5.9				0.8	
Control Delay (s/veh)		8.0				8.8					56.2				33.1	
Level of Service (LOS)		A				A					F				D	
Approach Delay (s/veh)		0.1				3.7				56.2				33.1		
Approach LOS		A				A				F				D		

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HCS Two-Way Stop-Control Report

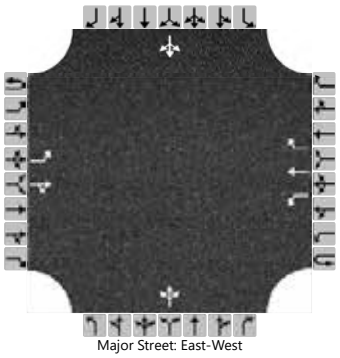
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2040
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & La Mesa
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	La Mesa
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		0	1	0		0	1	0
Configuration		L		TR		L	T	R			LTR				LTR	
Volume (veh/h)		25	585	3		0	195	15		0	10	4		65	3	25
Percent Heavy Vehicles (%)		0				0				0	13	0		0	50	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized						No										
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.63	6.20		7.10	7.00	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.12	3.30		3.50	4.45	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		27				0					15				101	
Capacity, c (veh/h)		1352				955					294				297	
v/c Ratio		0.02				0.00					0.05				0.34	
95% Queue Length, Q_{95} (veh)		0.1				0.0					0.2				1.5	
Control Delay (s/veh)		7.7				8.8					17.9				23.3	
Level of Service (LOS)		A				A					C				C	
Approach Delay (s/veh)	0.3				0.0				17.9				23.3			
Approach LOS	A				A				C				C			

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HCS Two-Way Stop-Control Report

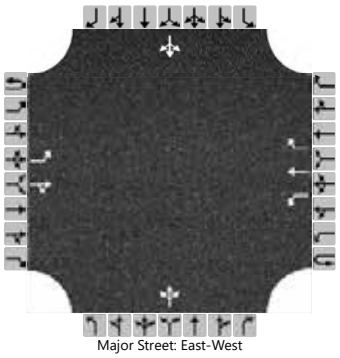
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2040
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & La Mesa
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	La Mesa
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		0	1	0		0	1	0
Configuration		L		TR		L	T	R			LTR				LTR	
Volume (veh/h)		20	275	0		7	610	85		3	4	0		65	10	25
Percent Heavy Vehicles (%)		0				0				0	0	0		9	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized						No										
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.20		7.19	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.30		3.58	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		22				8					8				109	
Capacity, c (veh/h)		864				1274					196				234	
v/c Ratio		0.03				0.01					0.04				0.46	
95% Queue Length, Q_{95} (veh)		0.1				0.0					0.1				2.3	
Control Delay (s/veh)		9.3				7.8					24.1				33.0	
Level of Service (LOS)		A				A					C				D	
Approach Delay (s/veh)	0.6				0.1				24.1				33.0			
Approach LOS	A				A				C				D			

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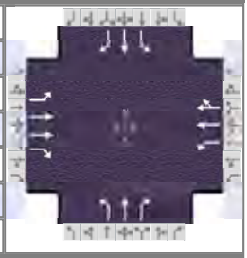
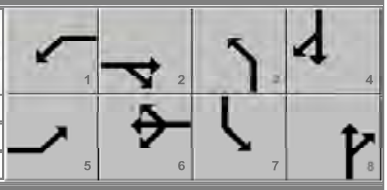
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2040	Analysis Period	1> 7:15
Intersection	SD 38 & Marion Street	File Name	(18) SD38&Marion_AM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	135	285	85	40	105	60	90	190	100	40	120	35

Signal Information												
Cycle, s	50.0	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	No	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
				Green	2.3	3.2	14.9	2.3	1.4	10.0		
				Yellow	4.0	0.0	4.0	4.0	0.0	4.0		
				Red	0.0	0.0	0.0	0.0	0.0	0.0		



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	1.1	4.0	2.0	3.0	2.0	3.0
Phase Duration, s	9.4	22.0	6.3	18.9	7.7	15.4	6.3	14.0
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	2.9	0.0	2.9	0.0	2.9	2.9	2.9	2.9
Queue Clearance Time (g_s), s	6.2		2.9		4.9	7.4	3.4	5.2
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5
Phase Call Probability	0.87		0.45		0.74	1.00	0.45	1.00
Max Out Probability	1.00		0.01		1.00	0.10	1.00	0.06

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	147	310	92	43	92	88	98	207	109	43	130	38
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1701	1674	1525	1714	1772	1563	1647	1674	1502	1554	1758	1466
Queue Service Time (g_s), s	4.2	3.3	2.1	0.9	1.9	2.1	2.9	5.4	3.0	1.4	3.2	1.1
Cycle Queue Clearance Time (g_c), s	4.2	3.3	2.1	0.9	1.9	2.1	2.9	5.4	3.0	1.4	3.2	1.1
Green Ratio (*g/C*)	0.11	0.36	0.36	0.34	0.30	0.30	0.07	0.23	0.23	0.05	0.20	0.20
Capacity (*c*), veh/h	185	1207	550	499	526	464	122	383	344	70	351	293
Volume-to-Capacity Ratio (*X*)	0.794	0.257	0.168	0.087	0.174	0.189	0.799	0.539	0.316	0.617	0.371	0.130
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	2.8	1.6	1.0	0.4	1.2	1.2	2.2	2.9	1.4	0.9	1.8	0.5
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	21.7	11.3	10.9	11.1	13.0	13.1	22.8	17.0	16.0	23.4	17.3	16.4
Incremental Delay (d_2), s/veh	4.2	0.5	0.7	0.0	0.7	0.9	8.2	0.4	0.2	3.2	0.2	0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	25.9	11.8	11.5	11.2	13.7	14.0	31.0	17.4	16.2	26.7	17.5	16.5
Level of Service (LOS)	C	B	B	B	B	B	C	B	B	C	B	B
Approach Delay, s/veh / LOS	15.5	B		13.3	B		20.3	C		19.2	B	
Intersection Delay, s/veh / LOS	17.2						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.08	B	2.09	B	2.27	B	2.42	B
Bicycle LOS Score / LOS	0.94	A	0.67	A	1.17	A	0.84	A

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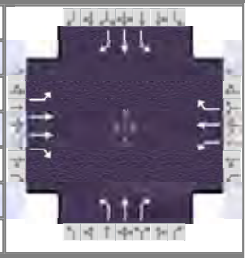
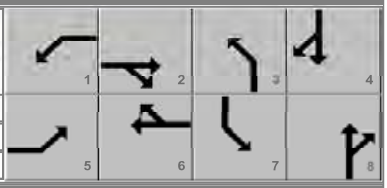
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	PM Peak	PHF	0.90
Urban Street	SD 38	Analysis Year	2040	Analysis Period	1> 16:45
Intersection	SD 38 & Marion Street	File Name	(18) SD38&Marion_PM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	55	190	90	140	300	45	150	170	105	70	295	170

Signal Information												
Cycle, s	50.0	Reference Phase	2									
Offset, s	0	Reference Point	End	Green	2.9	2.7	12.0	3.3	2.2	10.9		
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	0.0	4.0	4.0	0.0	4.0		
Force Mode	Fixed	Simult. Gap N/S	On	Red	0.0	0.0	0.0	0.0	0.0	0.0		



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	6.9	16.0	9.6	18.7	9.5	17.1	7.3	14.9
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	2.9	0.0	2.9	0.0	2.9	3.0	2.9	3.0
Queue Clearance Time (g_s), s	4.0		6.5		6.8	6.4	4.3	10.9
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
Phase Call Probability	0.57		0.88		0.90	1.00	0.66	1.00
Max Out Probability	1.00		1.00		1.00	0.18	1.00	1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	61	211	100	156	333	50	167	189	117	78	328	189
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1474	1660	1490	1688	1772	1406	1714	1772	1478	1688	1772	1478
Queue Service Time (g_s), s	2.0	2.6	2.7	4.5	8.2	1.3	4.8	4.4	3.2	2.3	8.9	5.7
Cycle Queue Clearance Time (g_c), s	2.0	2.6	2.7	4.5	8.2	1.3	4.8	4.4	3.2	2.3	8.9	5.7
Green Ratio (*g/C*)	0.06	0.24	0.24	0.11	0.29	0.29	0.11	0.26	0.26	0.07	0.22	0.22
Capacity (*c*), veh/h	84	797	358	189	522	414	189	464	387	111	387	322
Volume-to-Capacity Ratio (*X*)	0.725	0.265	0.280	0.824	0.638	0.121	0.884	0.407	0.301	0.698	0.848	0.586
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	1.2	1.5	1.6	4.8	5.8	0.7	6.0	2.4	1.4	1.5	7.8	3.0
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	23.2	15.4	15.5	21.7	15.3	12.9	21.9	15.2	14.8	22.9	18.8	17.5
Incremental Delay (d_2), s/veh	4.4	0.8	1.9	23.3	5.9	0.6	34.4	0.2	0.2	2.9	15.1	1.8
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	27.5	16.2	17.4	45.0	21.2	13.5	56.4	15.5	14.9	25.8	33.8	19.3
Level of Service (LOS)	C	B	B	D	C	B	E	B	B	C	C	B
Approach Delay, s/veh / LOS	18.4	B		27.4	C		29.8	C		28.2	C	
Intersection Delay, s/veh / LOS	26.5						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.10	B	2.09	B	2.26	B	2.27	B
Bicycle LOS Score / LOS	0.79	A	1.38	A	1.27	A	1.47	A

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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2040 NB
Jurisdiction	SDDOT	Time Analyzed	AM PEAK
Project Description	EB SD38 Corridor Study	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1084
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	480	Opposing Demand Flow Rate, veh/h	289
Peak Hour Factor	0.88	Total Trucks, %	2.16
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.28

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.34836	Speed Power Coefficient (p)	0.51760
PF Slope Coefficient (m)	-1.34657	PF Power Coefficient (p)	0.76322
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1084	-	-	52.4

Vehicle Results

Average Speed, mi/h	52.4	Percent Followers, %	53.6
Segment Travel Time, minutes	0.24	Follower Density (FD), followers/mi/ln	4.9
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	480	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.84	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	507
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	480	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.16
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.28

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.43973	PF Power Coefficient (p)	0.72475
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	507	-	-	51.9

Vehicle Results

Average Speed, mi/h	51.9	Percent Followers, %	57.1
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	5.3
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	480	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.84	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	535
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	480	Opposing Demand Flow Rate, veh/h	289
Peak Hour Factor	0.88	Total Trucks, %	2.16
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.28

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.34836	Speed Power Coefficient (p)	0.51760
PF Slope Coefficient (m)	-1.34657	PF Power Coefficient (p)	0.76322
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	535	-	-	52.4

Vehicle Results

Average Speed, mi/h	52.4	Percent Followers, %	53.6
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	4.9
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	480	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.84	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 4

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1494
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	609	Opposing Demand Flow Rate, veh/h	323
Peak Hour Factor	0.88	Total Trucks, %	1.63
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.36

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36176	Speed Power Coefficient (p)	0.51063
PF Slope Coefficient (m)	-1.25164	PF Power Coefficient (p)	0.80237
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1494	-	-	66.9

Vehicle Results

Average Speed, mi/h	66.9	Percent Followers, %	56.9
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	5.2
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	609	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.96	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 5

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5762
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	609	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	1.63
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.36

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.62977	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.20069	PF Power Coefficient (p)	0.78591
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5762	-	-	66.5

Vehicle Results

Average Speed, mi/h	66.5	Percent Followers, %	55.7
Segment Travel Time, minutes	0.98	Follower Density (FD), followers/mi/ln	5.1
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	609	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.96	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	383
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	614	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	1.89
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.36

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29361	PF Power Coefficient (p)	0.75772
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	383	-	-	66.5

Vehicle Results

Average Speed, mi/h	66.5	Percent Followers, %	59.1
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	5.4
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	614	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.03	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1485
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	642	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.38

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57684	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28453	PF Power Coefficient (p)	0.76145
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1485	-	-	66.5

Vehicle Results

Average Speed, mi/h	66.5	Percent Followers, %	60.0
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	5.8
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	642	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.39	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 8

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	426
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	306	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	6.47
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.18

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29307	PF Power Coefficient (p)	0.75839
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	426	-	-	67.6

Vehicle Results

Average Speed, mi/h	67.6	Percent Followers, %	40.9
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	1.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	306	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.06	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1212
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	291	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29321	PF Power Coefficient (p)	0.75821
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1212	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.8
Segment Travel Time, minutes	0.20	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	291	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.62	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1877
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	291	Opposing Demand Flow Rate, veh/h	207
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33123	Speed Power Coefficient (p)	0.53735
PF Slope Coefficient (m)	-1.21436	PF Power Coefficient (p)	0.81762
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1877	-	-	68.2

Vehicle Results

Average Speed, mi/h	68.2	Percent Followers, %	35.8
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	291	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.62	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1872
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	291	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58354	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26676	PF Power Coefficient (p)	0.76864
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1872	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	38.8
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	291	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.62	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 12

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	3603
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	291	Opposing Demand Flow Rate, veh/h	207
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35488	Speed Power Coefficient (p)	0.53735
PF Slope Coefficient (m)	-1.17100	PF Power Coefficient (p)	0.83467
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3603	-	-	68.2

Vehicle Results			
Average Speed, mi/h	68.2	Percent Followers, %	34.2
Segment Travel Time, minutes	0.60	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	291	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.62	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 13

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1053
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	291	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29321	PF Power Coefficient (p)	0.75821

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1053	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.8
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	291	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.62	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 14

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1120
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	291	Opposing Demand Flow Rate, veh/h	207
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32132	Speed Power Coefficient (p)	0.53735
PF Slope Coefficient (m)	-1.23984	PF Power Coefficient (p)	0.80643
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1120	-	-	68.2

Vehicle Results

Average Speed, mi/h	68.2	Percent Followers, %	36.7
Segment Travel Time, minutes	0.19	Follower Density (FD), followers/mi/ln	1.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	291	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.62	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 15

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1272
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	347	Opposing Demand Flow Rate, veh/h	233
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33046	Speed Power Coefficient (p)	0.53049
PF Slope Coefficient (m)	-1.24528	PF Power Coefficient (p)	0.80456
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1272	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	41.2
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	2.1
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	347	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.65	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 16

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	625
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	347	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29323	PF Power Coefficient (p)	0.75819
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	625	-	-	67.4

Vehicle Results

Average Speed, mi/h	67.4	Percent Followers, %	44.0
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	2.3
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	347	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.65	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 17

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1995
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	347	Opposing Demand Flow Rate, veh/h	233
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34227	Speed Power Coefficient (p)	0.53049
PF Slope Coefficient (m)	-1.21527	PF Power Coefficient (p)	0.81755
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1995	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	40.0

Segment Travel Time, minutes	0.33	Follower Density (FD), followers/mi/ln	2.0
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	347	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.65	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 18

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1399
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	347	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57524	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28884	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1399	-	-	67.4

Vehicle Results

Average Speed, mi/h	67.4	Percent Followers, %	43.8
Segment Travel Time, minutes	0.24	Follower Density (FD), followers/mi/ln	2.3
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	347	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.65	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 19

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1254
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	625	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	1.51
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.37

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29366	PF Power Coefficient (p)	0.75766
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1254	-	-	66.5

Vehicle Results			
Average Speed, mi/h	66.5	Percent Followers, %	59.6
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	5.6
Vehicle LOS	C		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	625	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.94	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 20

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	1108
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	625	Opposing Demand Flow Rate, veh/h	216
Peak Hour Factor	0.88	Total Trucks, %	1.51
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.37

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32457	Speed Power Coefficient (p)	0.53490
PF Slope Coefficient (m)	-1.24221	PF Power Coefficient (p)	0.80521
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1108	-	-	66.9

Vehicle Results

Average Speed, mi/h	66.9	Percent Followers, %	57.3
Segment Travel Time, minutes	0.19	Follower Density (FD), followers/mi/ln	5.3
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	625	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.94	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 21

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2901
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	625	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	1.51
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.37

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.59854	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.23554	PF Power Coefficient (p)	0.77974
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2901	-	-	66.5

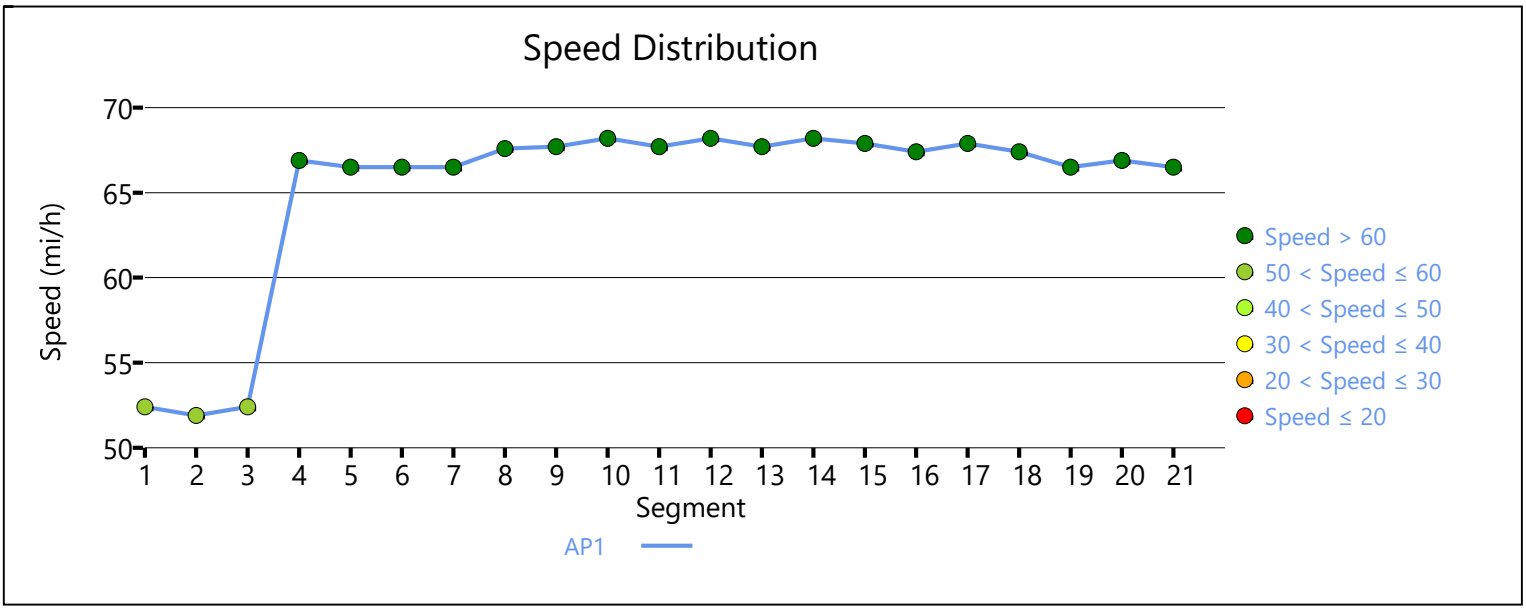
Vehicle Results

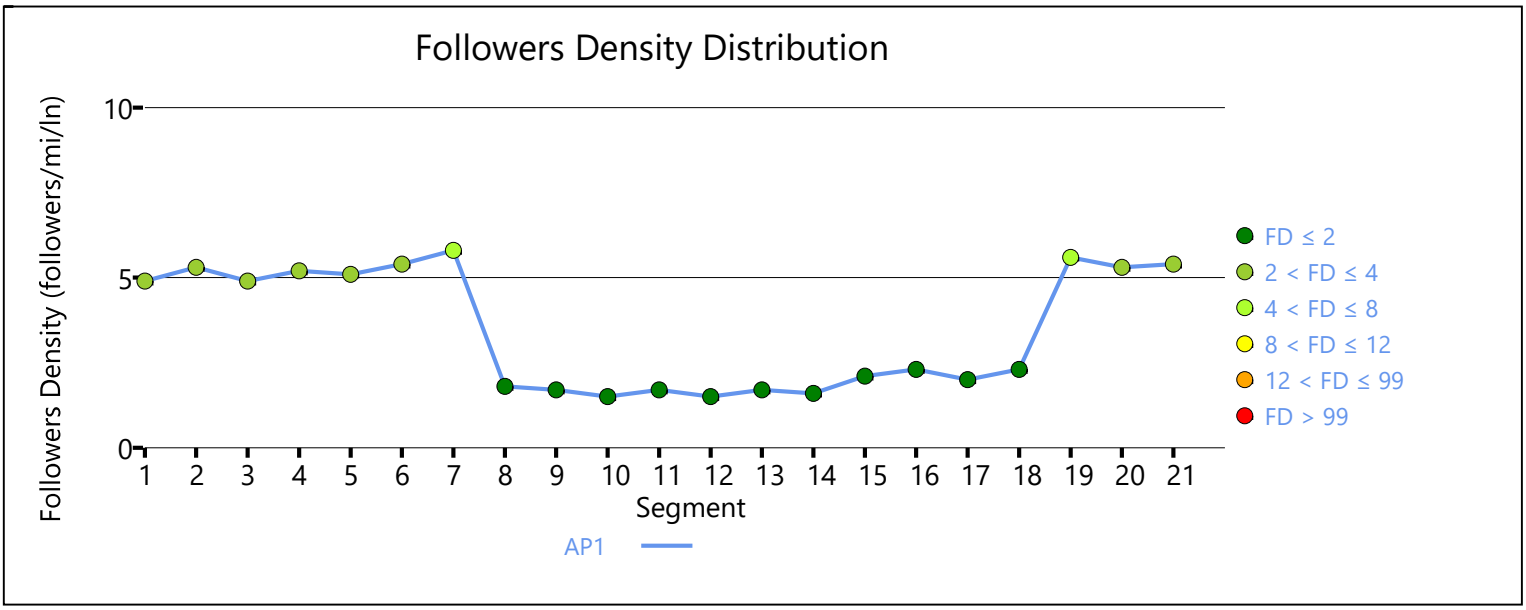
Average Speed, mi/h	66.5	Percent Followers, %	57.5
Segment Travel Time, minutes	0.50	Follower Density (FD), followers/mi/ln	5.4
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	625	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.94	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Facility Results				
T	**VMT veh-mi/p**	**VHD veh-h/p**	**Follower Density, followers/ mi/ln**	**LOS**
1	625	0.41	3.5	B





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2040 NB
Jurisdiction	SDDOT	Time Analyzed	PM PEAK
Project Description	EB SD38 Corridor Study	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1084
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	299	Opposing Demand Flow Rate, veh/h	551
Peak Hour Factor	0.88	Total Trucks, %	2.16
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.18

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.41560	Speed Power Coefficient (p)	0.47557
PF Slope Coefficient (m)	-1.38878	PF Power Coefficient (p)	0.75207
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1084	-	-	53.0

Vehicle Results

Average Speed, mi/h	53.0	Percent Followers, %	42.9
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	2.4
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	299	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.60	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1014
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	299	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.16
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.18

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.43973	PF Power Coefficient (p)	0.72475
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	507	-	-	52.7
2	Horizontal Curve	507	3000	0.0	52.7

Vehicle Results

Average Speed, mi/h	52.7	Percent Followers, %	45.1
Segment Travel Time, minutes	0.22	Follower Density (FD), followers/mi/ln	2.6
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	299	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.60	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	535
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	299	Opposing Demand Flow Rate, veh/h	551
Peak Hour Factor	0.88	Total Trucks, %	2.16
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.18

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.41560	Speed Power Coefficient (p)	0.47557
PF Slope Coefficient (m)	-1.38878	PF Power Coefficient (p)	0.75207
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	535	-	-	53.0

Vehicle Results

Average Speed, mi/h	53.0	Percent Followers, %	42.9
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	2.4
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	299	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.60	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 4

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1494
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	333	Opposing Demand Flow Rate, veh/h	735
Peak Hour Factor	0.88	Total Trucks, %	1.63
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.45661	Speed Power Coefficient (p)	0.45644
PF Slope Coefficient (m)	-1.28454	PF Power Coefficient (p)	0.78414
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1494	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	41.9
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	2.1
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	333	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.65	Bicycle Effective Speed Factor	5.07

Bicycle LOS	C		

Segment 5

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5762
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	333	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	1.63
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.62977	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.20069	PF Power Coefficient (p)	0.78591
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5762	-	-	67.5

Vehicle Results

Average Speed, mi/h	67.5	Percent Followers, %	39.7
Segment Travel Time, minutes	0.97	Follower Density (FD), followers/mi/ln	2.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	333	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.65	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	383
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	340	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	1.89
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29361	PF Power Coefficient (p)	0.75772
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	383	-	-	67.5

Vehicle Results

Average Speed, mi/h	67.5	Percent Followers, %	43.5
Segment Travel Time, minutes	0.06	Follower Density (FD), followers/mi/ln	2.2
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	340	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.73	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1485
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	380	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.22

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57684	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28453	PF Power Coefficient (p)	0.76145
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1485	-	-	67.3

Vehicle Results

Average Speed, mi/h	67.3	Percent Followers, %	45.9
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	2.6

Vehicle LOS	B		
Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	380	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.13	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 8

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	426
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0
Demand and Capacity			
Directional Demand Flow Rate, veh/h	289	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	6.47
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17
Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29307	PF Power Coefficient (p)	0.75839
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	426	-	-	67.7

Vehicle Results			
Average Speed, mi/h	67.7	Percent Followers, %	39.6
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		
Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	289	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.03	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 9

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1212
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	251	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29321	PF Power Coefficient (p)	0.75821
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1212	-	-	67.9

Vehicle Results			
Average Speed, mi/h	67.9	Percent Followers, %	36.5
Segment Travel Time, minutes	0.20	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	251	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.55	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 10

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	1877
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	251	Opposing Demand Flow Rate, veh/h	344
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.37450	Speed Power Coefficient (p)	0.50652
PF Slope Coefficient (m)	-1.23731	PF Power Coefficient (p)	0.80872
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1877	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	33.3
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	251	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.55	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1872
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	251	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58354	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26676	PF Power Coefficient (p)	0.76864
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1872	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	35.5
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	251	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.55	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 12

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3603
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	251	Opposing Demand Flow Rate, veh/h	344
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39815	Speed Power Coefficient (p)	0.50652
PF Slope Coefficient (m)	-1.19302	PF Power Coefficient (p)	0.82521
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3603	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	31.7
Segment Travel Time, minutes	0.60	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	251	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.55	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 13

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1053
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	251	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29321	PF Power Coefficient (p)	0.75821
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1053	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	36.5
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	251	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.55	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 14

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1120
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	251	Opposing Demand Flow Rate, veh/h	344
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36460	Speed Power Coefficient (p)	0.50652
PF Slope Coefficient (m)	-1.26336	PF Power Coefficient (p)	0.79785
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1120	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	34.3
Segment Travel Time, minutes	0.19	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	251	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.55	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 15

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1272
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	316	Opposing Demand Flow Rate, veh/h	411
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.19

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.38249	Speed Power Coefficient (p)	0.49499
PF Slope Coefficient (m)	-1.27147	PF Power Coefficient (p)	0.79437
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1272	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	39.9
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	1.9
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	316	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.61	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 16

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	625
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	316	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.19

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29323	PF Power Coefficient (p)	0.75819
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	625	-	-	67.6

Vehicle Results

Average Speed, mi/h	67.6	Percent Followers, %	41.7
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	1.9
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	316	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.61	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 17

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1995
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	316	Opposing Demand Flow Rate, veh/h	411
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.19

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39429	Speed Power Coefficient (p)	0.49499
PF Slope Coefficient (m)	-1.24073	PF Power Coefficient (p)	0.80695
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1995	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	38.7
Segment Travel Time, minutes	0.33	Follower Density (FD), followers/mi/ln	1.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	316	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.61	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 18

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1399
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	316	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.19

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57524	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28884	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1399	-	-	67.6

Vehicle Results

Average Speed, mi/h	67.6	Percent Followers, %	41.5
Segment Travel Time, minutes	0.24	Follower Density (FD), followers/mi/ln	1.9
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	316	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.61	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 19

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1254
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	309	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	1.51
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.18

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29366	PF Power Coefficient (p)	0.75766
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1254	-	-	67.6

Vehicle Results			
Average Speed, mi/h	67.6	Percent Followers, %	41.2
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	1.9
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	309	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.58	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 20

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	1108
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	309	Opposing Demand Flow Rate, veh/h	659
Peak Hour Factor	0.88	Total Trucks, %	1.51
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.18

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.43837	Speed Power Coefficient (p)	0.46364
PF Slope Coefficient (m)	-1.29067	PF Power Coefficient (p)	0.78323

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1108	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	40.2
Segment Travel Time, minutes	0.19	Follower Density (FD), followers/mi/ln	1.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	309	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.58	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 21

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2901
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	309	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	1.51
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.18

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.59854	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.23554	PF Power Coefficient (p)	0.77974
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2901	-	-	67.6

Vehicle Results

Average Speed, mi/h	67.6	Percent Followers, %	39.0
Segment Travel Time, minutes	0.49	Follower Density (FD), followers/mi/ln	1.8
Vehicle LOS	A		

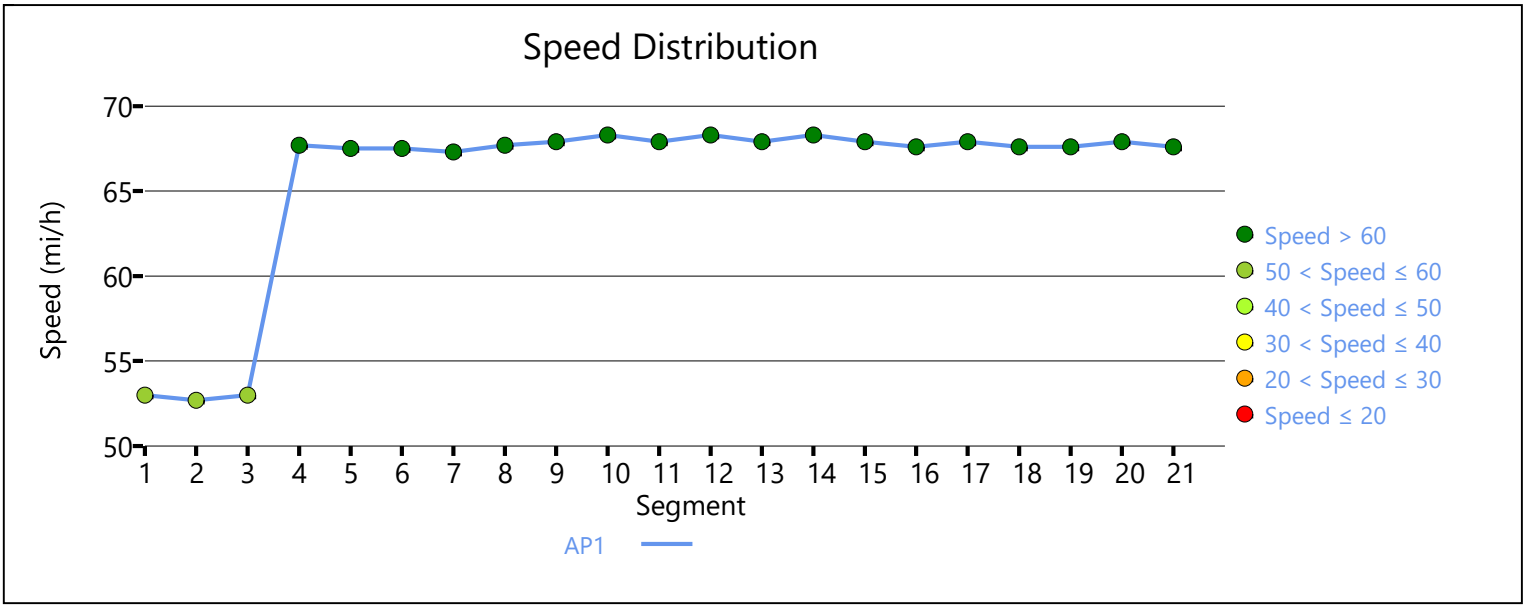
Bicycle Results

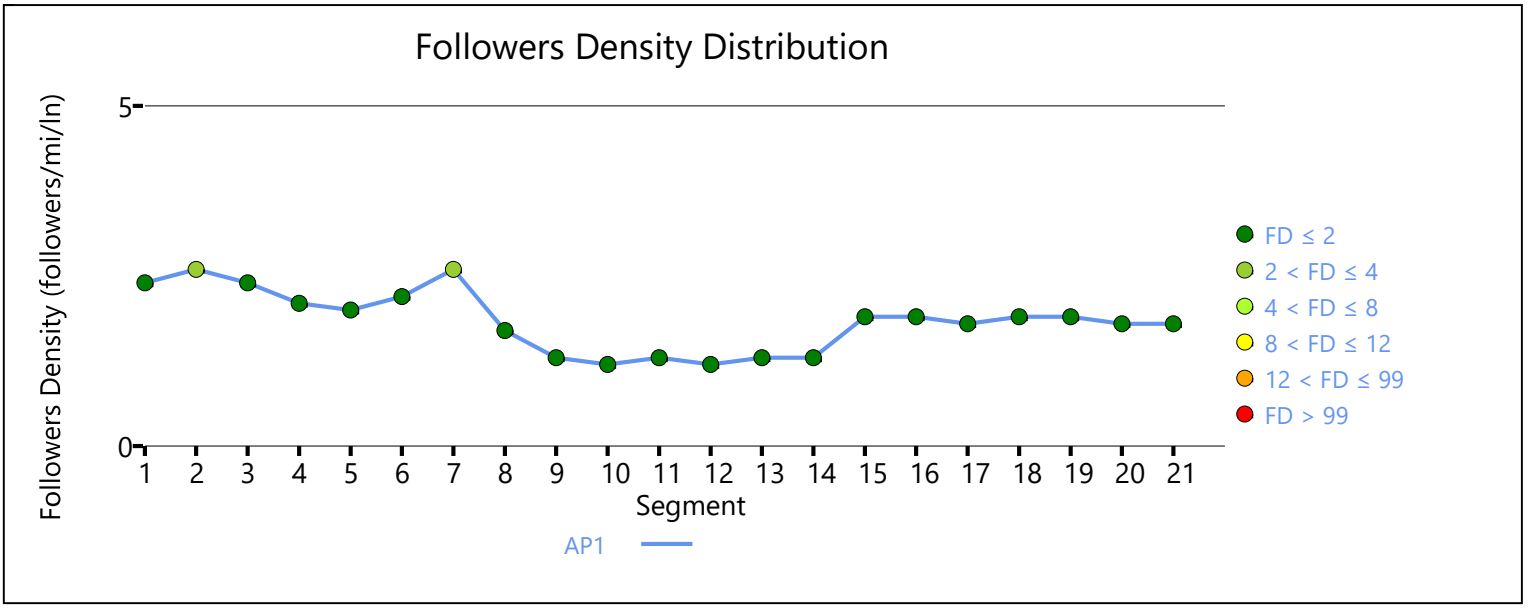
Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	309	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.58	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	417	0.20	1.8	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2040 NB
Jurisdiction	SDDOT	Time Analyzed	AM Peak
Project Description	SD 38 WB East of Hartford	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1727
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	216	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	8.97
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58112	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.27241	PF Power Coefficient (p)	0.76681
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1727	-	-	68.1

Vehicle Results

Average Speed, mi/h	68.1	Percent Followers, %	32.5
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	216	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.83	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1676
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	216	Opposing Demand Flow Rate, veh/h	625
Peak Hour Factor	0.88	Total Trucks, %	8.97
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.43792	Speed Power Coefficient (p)	0.46717
PF Slope Coefficient (m)	-1.26992	PF Power Coefficient (p)	0.79284
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1676	-	-	68.4

Vehicle Results			
Average Speed, mi/h	68.4	Percent Followers, %	31.4
Segment Travel Time, minutes	0.28	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	216	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.83	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Segment 3

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1864
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	233	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58341	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26572	PF Power Coefficient (p)	0.77025
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1864	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	33.8
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	233	Bicycle Effective Width, ft	24
Bicycle LOS Score	8.85	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	718
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	233	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29182	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	718	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	34.8
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	233	Bicycle Effective Width, ft	24
Bicycle LOS Score	8.85	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1738
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	233	Opposing Demand Flow Rate, veh/h	347
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.37282	Speed Power Coefficient (p)	0.50610
PF Slope Coefficient (m)	-1.24196	PF Power Coefficient (p)	0.80802
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1738	-	-	68.4

Vehicle Results

Average Speed, mi/h	68.4	Percent Followers, %	31.8
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	233	Bicycle Effective Width, ft	24
Bicycle LOS Score	8.85	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	579
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	233	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29182	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	579	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	34.8
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	233	Bicycle Effective Width, ft	24
Bicycle LOS Score	8.85	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2262
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	207	Opposing Demand Flow Rate, veh/h	291
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36495	Speed Power Coefficient (p)	0.51711
PF Slope Coefficient (m)	-1.21478	PF Power Coefficient (p)	0.81940
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2262	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	28.4
Segment Travel Time, minutes	0.37	Follower Density (FD), followers/mi/ln	0.9
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	207	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.63	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 8

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	980
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	207	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	980	-	-	68.2

Vehicle Results			
Average Speed, mi/h	68.2	Percent Followers, %	32.3
Segment Travel Time, minutes	0.16	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	207	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.63	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 9

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	3667
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	207	Opposing Demand Flow Rate, veh/h	291
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.38336	Speed Power Coefficient (p)	0.51711
PF Slope Coefficient (m)	-1.18328	PF Power Coefficient (p)	0.83086
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3667	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.3
Segment Travel Time, minutes	0.61	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	207	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.63	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 10

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1846
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	207	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58311	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26629	PF Power Coefficient (p)	0.77017
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1846	-	-	68.2

Vehicle Results

Average Speed, mi/h	68.2	Percent Followers, %	31.4
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	207	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.63	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2174
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	207	Opposing Demand Flow Rate, veh/h	291
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36363	Speed Power Coefficient (p)	0.51711
PF Slope Coefficient (m)	-1.21761	PF Power Coefficient (p)	0.81825
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2174	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	28.5
Segment Travel Time, minutes	0.36	Follower Density (FD), followers/mi/ln	0.9
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	207	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.63	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 12

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1277
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	207	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1277	-	-	68.2

Vehicle Results

Average Speed, mi/h	68.2	Percent Followers, %	32.3
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	207	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.63	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 13

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	779
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	207	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	779	-	-	68.2

Vehicle Results

Average Speed, mi/h	68.2	Percent Followers, %	32.3
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	207	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.63	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	422
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	255	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	13.95
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29219	PF Power Coefficient (p)	0.75948
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	422	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	36.7
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	255	Bicycle Effective Width, ft	24
Bicycle LOS Score	7.20	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 15

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1478
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	224	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	19.53
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57671	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28298	PF Power Coefficient (p)	0.76370
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1478	-	-	68.1

Vehicle Results

Average Speed, mi/h	68.1	Percent Followers, %	33.6
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	224	Bicycle Effective Width, ft	24
Bicycle LOS Score	10.35	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 16

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	384
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	333	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.76
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29233	PF Power Coefficient (p)	0.75931
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	384	-	-	67.5

Vehicle Results

Average Speed, mi/h	67.5	Percent Followers, %	42.9
Segment Travel Time, minutes	0.06	Follower Density (FD), followers/mi/ln	2.1
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	333	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.74	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 17

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3732
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	323	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.19

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.60878	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.21846	PF Power Coefficient (p)	0.78615
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3732	-	-	67.5

Vehicle Results

Average Speed, mi/h	67.5	Percent Followers, %	39.4

Segment Travel Time, minutes	0.63	Follower Density (FD), followers/mi/ln	1.9
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	323	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.46	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 18

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1360
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	323	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.19

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57450	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29014	PF Power Coefficient (p)	0.76012
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1360	-	-	67.6

Vehicle Results

Average Speed, mi/h	67.6	Percent Followers, %	42.1
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	2.0
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	323	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.46	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 19

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1595
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	323	Opposing Demand Flow Rate, veh/h	609
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.19

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.43319	Speed Power Coefficient (p)	0.46889
PF Slope Coefficient (m)	-1.27240	PF Power Coefficient (p)	0.79247
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1595	-	-	67.8

Vehicle Results			
Average Speed, mi/h	67.8	Percent Followers, %	40.5
Segment Travel Time, minutes	0.27	Follower Density (FD), followers/mi/ln	1.9
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	323	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.46	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 20

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	595
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	323	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.19

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29239	PF Power Coefficient (p)	0.75923
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	595	-	-	67.6

Vehicle Results

Average Speed, mi/h	67.6	Percent Followers, %	42.2
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	2.0
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	323	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.46	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 21

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	958
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	289	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	10.81
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.43859	PF Power Coefficient (p)	0.72596
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	958	-	-	52.7

Vehicle Results

Average Speed, mi/h	52.7	Percent Followers, %	44.2
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	2.4
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	289	Bicycle Effective Width, ft	24
Bicycle LOS Score	5.35	Bicycle Effective Speed Factor	4.62
Bicycle LOS	E		

Segment 22

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1659
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	289	Opposing Demand Flow Rate, veh/h	480
Peak Hour Factor	0.88	Total Trucks, %	10.81
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.40548	Speed Power Coefficient (p)	0.48486
PF Slope Coefficient (m)	-1.35962	PF Power Coefficient (p)	0.76214
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1659	-	-	53.0

Vehicle Results

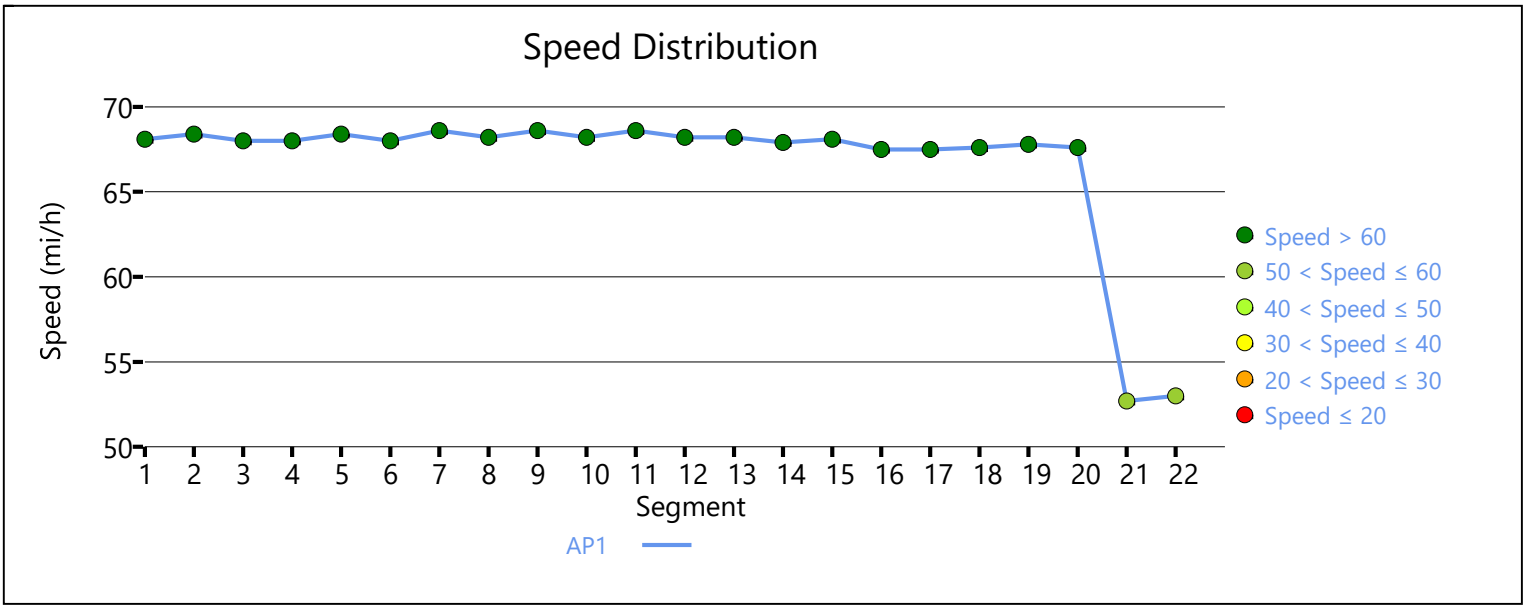
Average Speed, mi/h	53.0	Percent Followers, %	41.0
Segment Travel Time, minutes	0.36	Follower Density (FD), followers/mi/ln	2.2
Vehicle LOS	B		

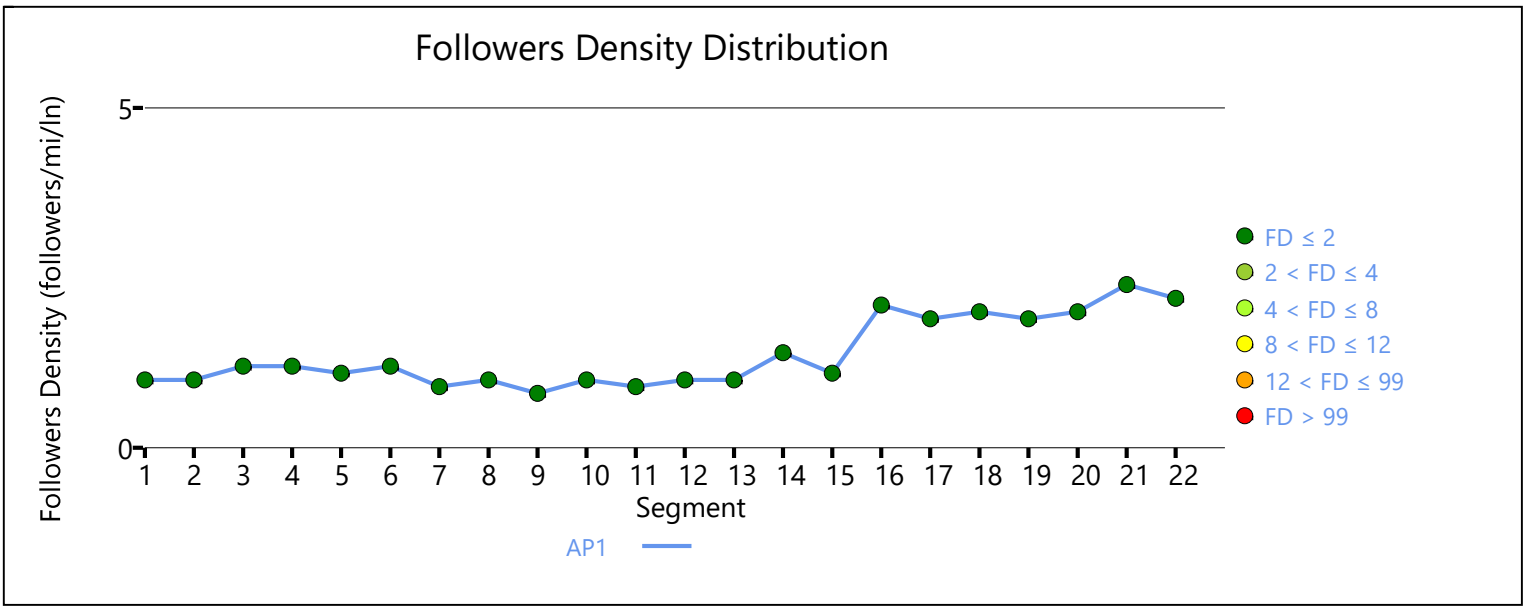
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	289	Bicycle Effective Width, ft	24
Bicycle LOS Score	5.35	Bicycle Effective Speed Factor	4.62
Bicycle LOS	E		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	343	0.15	1.3	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2040 NB
Jurisdiction	SDDOT	Time Analyzed	PM Peak
Project Description	SD 38 WB East of Hartford	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1727
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	659	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	8.97
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.39

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58112	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.27241	PF Power Coefficient (p)	0.76681
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	6.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1727	-	-	66.4

Vehicle Results

Average Speed, mi/h	66.4	Percent Followers, %	60.3
Segment Travel Time, minutes	0.30	Follower Density (FD), followers/mi/ln	6.0
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	659	Bicycle Effective Width, ft	24
Bicycle LOS Score	5.39	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1676
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	659	Opposing Demand Flow Rate, veh/h	309
Peak Hour Factor	0.88	Total Trucks, %	8.97
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.39

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36102	Speed Power Coefficient (p)	0.51334
PF Slope Coefficient (m)	-1.24034	PF Power Coefficient (p)	0.80784
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1676	-	-	66.8

Vehicle Results

Average Speed, mi/h	66.8	Percent Followers, %	58.8
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	5.8
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	659	Bicycle Effective Width, ft	24
Bicycle LOS Score	5.39	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Segment 3

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1864
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	411	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58341	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26572	PF Power Coefficient (p)	0.77025
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1864	-	-	67.2

Vehicle Results

Average Speed, mi/h	67.2	Percent Followers, %	47.2
Segment Travel Time, minutes	0.32	Follower Density (FD), followers/mi/ln	2.9
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	411	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.14	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	718
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	411	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29182	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	718	-	-	67.2

Vehicle Results

Average Speed, mi/h	67.2	Percent Followers, %	48.2
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	3.0
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	411	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.14	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1738
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	411	Opposing Demand Flow Rate, veh/h	316
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36408	Speed Power Coefficient (p)	0.51197
PF Slope Coefficient (m)	-1.23776	PF Power Coefficient (p)	0.80977
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1738	-	-	67.6

Vehicle Results

Average Speed, mi/h	67.6	Percent Followers, %	45.3
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	2.8
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	411	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.14	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	579
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	411	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29182	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	579	-	-	67.2

Vehicle Results

Average Speed, mi/h	67.2	Percent Followers, %	48.2
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	3.0
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	411	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.14	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2262
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	344	Opposing Demand Flow Rate, veh/h	251
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35242	Speed Power Coefficient (p)	0.52604
PF Slope Coefficient (m)	-1.20821	PF Power Coefficient (p)	0.82203
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2262	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	39.5
Segment Travel Time, minutes	0.38	Follower Density (FD), followers/mi/ln	2.0
Vehicle LOS	B		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	344	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.89	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 8

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	980
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	344	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	980	-	-	67.5

Vehicle Results			
Average Speed, mi/h	67.5	Percent Followers, %	43.7
Segment Travel Time, minutes	0.17	Follower Density (FD), followers/mi/ln	2.2
Vehicle LOS	B		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	344	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.89	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 9

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	3667
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	344	Opposing Demand Flow Rate, veh/h	251
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.37083	Speed Power Coefficient (p)	0.52604
PF Slope Coefficient (m)	-1.17691	PF Power Coefficient (p)	0.83360
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3667	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	38.4
Segment Travel Time, minutes	0.61	Follower Density (FD), followers/mi/ln	1.9
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	344	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.89	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 10

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1846
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	344	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58311	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26629	PF Power Coefficient (p)	0.77017
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1846	-	-	67.5

Vehicle Results

Average Speed, mi/h	67.5	Percent Followers, %	42.7
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	2.2
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	344	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.89	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2174
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	344	Opposing Demand Flow Rate, veh/h	251
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35110	Speed Power Coefficient (p)	0.52604
PF Slope Coefficient (m)	-1.21102	PF Power Coefficient (p)	0.82087
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2174	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	39.6
Segment Travel Time, minutes	0.36	Follower Density (FD), followers/mi/ln	2.0
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	344	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.89	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 12

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1277
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	344	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1277	-	-	67.5

Vehicle Results

Average Speed, mi/h	67.5	Percent Followers, %	43.7
Segment Travel Time, minutes	0.22	Follower Density (FD), followers/mi/ln	2.2
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	344	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.89	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 13

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	779
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	344	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.20

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	779	-	-	67.5

Vehicle Results

Average Speed, mi/h	67.5	Percent Followers, %	43.7
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	2.2
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	344	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.89	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	422
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	430	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	13.95
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.25

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29219	PF Power Coefficient (p)	0.75948
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	422	-	-	67.1

Vehicle Results

Average Speed, mi/h	67.1	Percent Followers, %	49.3
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	3.2
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	430	Bicycle Effective Width, ft	24
Bicycle LOS Score	7.47	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 15

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1478
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	382	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	19.53
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.22

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57671	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28298	PF Power Coefficient (p)	0.76370
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1478	-	-	67.3

Vehicle Results

Average Speed, mi/h	67.3	Percent Followers, %	45.9
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	2.6
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	382	Bicycle Effective Width, ft	24
Bicycle LOS Score	10.62	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 16

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	384
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	740	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.76
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.44

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29233	PF Power Coefficient (p)	0.75931
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	384	-	-	66.2

Vehicle Results

Average Speed, mi/h	66.2	Percent Followers, %	64.2
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	7.2
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	740	Bicycle Effective Width, ft	24
Bicycle LOS Score	7.15	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 17

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3732
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	735	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.43

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.60878	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.21846	PF Power Coefficient (p)	0.78615
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	6.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3732	-	-	66.2

Vehicle Results

Average Speed, mi/h	66.2	Percent Followers, %	61.6

Segment Travel Time, minutes	0.64	Follower Density (FD), followers/mi/ln	6.8
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	735	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.88	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 18

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1360
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	735	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.43

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57450	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29014	PF Power Coefficient (p)	0.76012
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1360	-	-	66.2

Vehicle Results

Average Speed, mi/h	66.2	Percent Followers, %	64.0
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	7.1
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	735	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.88	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 19

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1595
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	735	Opposing Demand Flow Rate, veh/h	333
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.43

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36650	Speed Power Coefficient (p)	0.50865
PF Slope Coefficient (m)	-1.24703	PF Power Coefficient (p)	0.80540
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	6.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1595	-	-	66.5

Vehicle Results

Average Speed, mi/h	66.5	Percent Followers, %	62.2
Segment Travel Time, minutes	0.27	Follower Density (FD), followers/mi/ln	6.9
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	735	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.88	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 20

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	595
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	735	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.43

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29239	PF Power Coefficient (p)	0.75923
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	595	-	-	66.2

Vehicle Results

Average Speed, mi/h	66.2	Percent Followers, %	64.1
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	7.1
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	735	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.88	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 21

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	958
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	551	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	10.81
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.32

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.43859	PF Power Coefficient (p)	0.72596
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	6.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	958	-	-	51.7

Vehicle Results

Average Speed, mi/h	51.7	Percent Followers, %	60.7
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	6.5
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	551	Bicycle Effective Width, ft	24
Bicycle LOS Score	5.68	Bicycle Effective Speed Factor	4.62
Bicycle LOS	F		

Segment 22

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1659
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	551	Opposing Demand Flow Rate, veh/h	299
Peak Hour Factor	0.88	Total Trucks, %	10.81
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.32

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.35768	Speed Power Coefficient (p)	0.51544
PF Slope Coefficient (m)	-1.30606	PF Power Coefficient (p)	0.78393
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1659	-	-	57.1

Vehicle Results

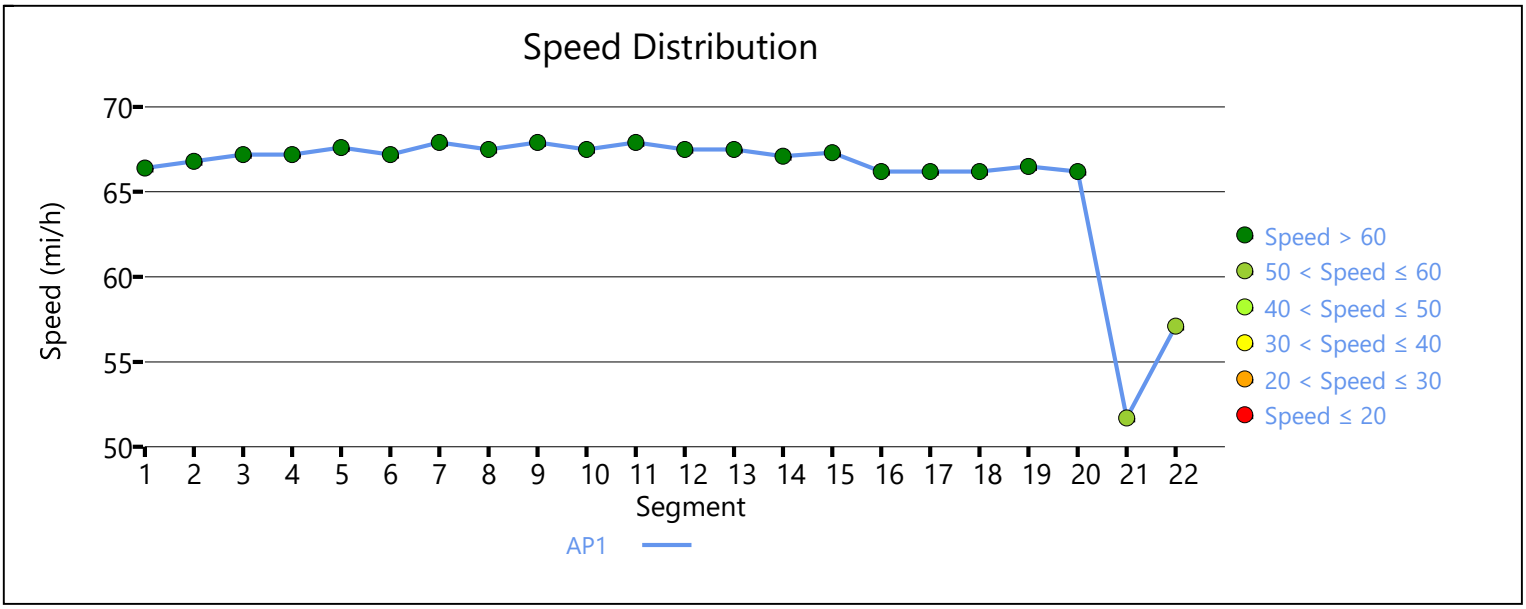
Average Speed, mi/h	57.1	Percent Followers, %	55.9
Segment Travel Time, minutes	0.33	Follower Density (FD), followers/mi/ln	5.4
Vehicle LOS	C		

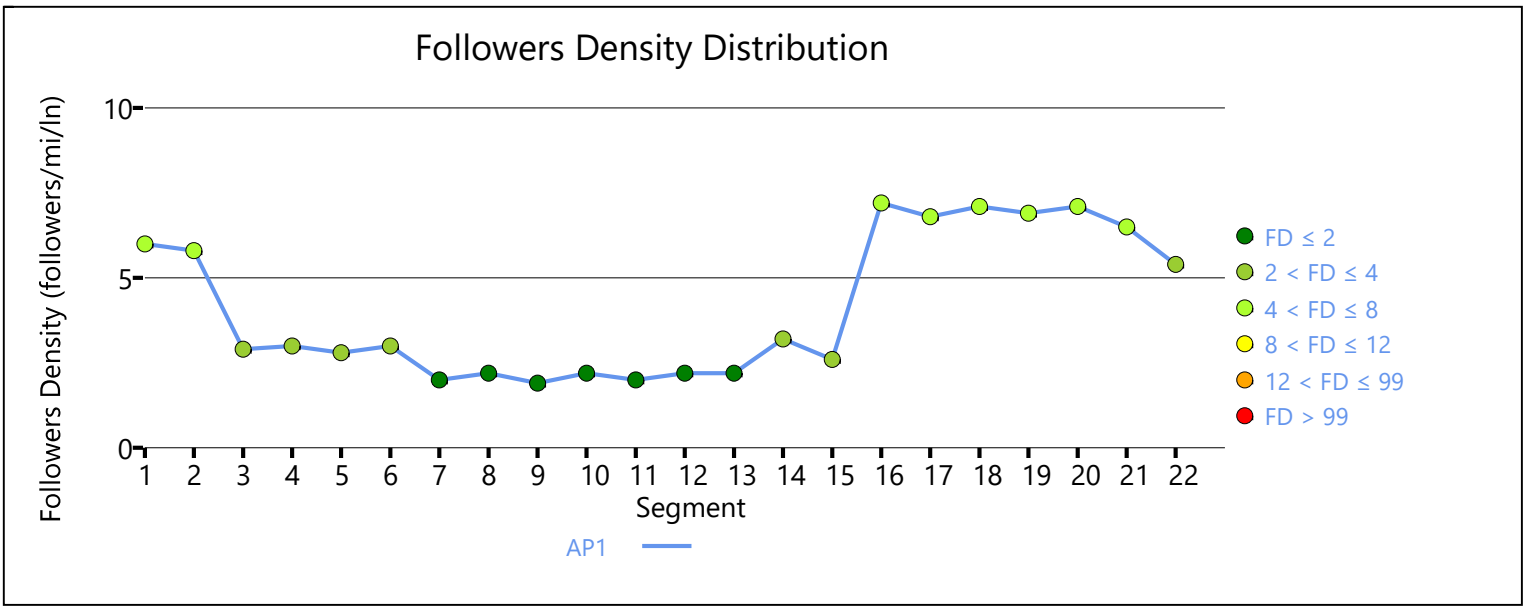
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	551	Bicycle Effective Width, ft	24
Bicycle LOS Score	5.68	Bicycle Effective Speed Factor	4.62
Bicycle LOS	F		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	690	0.47	4.0	C





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2040 NB
Jurisdiction	SDDOT	Time Analyzed	AM Peak
Project Description	West of Hartford SD 38 EB	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1069
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	202	Opposing Demand Flow Rate, veh/h	142
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.29579	Speed Power Coefficient (p)	0.55752
PF Slope Coefficient (m)	-1.22341	PF Power Coefficient (p)	0.81179
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1069	-	-	68.8

Vehicle Results

Average Speed, mi/h	68.8	Percent Followers, %	28.4
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	202	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.61	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	664
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	202	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	664	-	-	68.2

Vehicle Results			
Average Speed, mi/h	68.2	Percent Followers, %	31.9
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	0.9
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	202	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.61	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 3

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	1871
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	202	Opposing Demand Flow Rate, veh/h	142
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30560	Speed Power Coefficient (p)	0.55752
PF Slope Coefficient (m)	-1.19854	PF Power Coefficient (p)	0.82311
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1871	-	-	68.8

Vehicle Results

Average Speed, mi/h	68.8	Percent Followers, %	27.5
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	202	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.61	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	925
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	202	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	925	-	-	68.2

Vehicle Results

Average Speed, mi/h	68.2	Percent Followers, %	31.9
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	0.9
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	202	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.61	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4476
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	202	Opposing Demand Flow Rate, veh/h	142
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33909	Speed Power Coefficient (p)	0.55752
PF Slope Coefficient (m)	-1.14461	PF Power Coefficient (p)	0.84352
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4476	-	-	68.8

Vehicle Results

Average Speed, mi/h	68.8	Percent Followers, %	25.7
Segment Travel Time, minutes	0.74	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	202	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.61	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	896
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	202	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	896	-	-	68.2

Vehicle Results

Average Speed, mi/h	68.2	Percent Followers, %	31.9
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	0.9
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	202	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.61	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	743
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	202	Opposing Demand Flow Rate, veh/h	142
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.29579	Speed Power Coefficient (p)	0.55752
PF Slope Coefficient (m)	-1.22341	PF Power Coefficient (p)	0.81179
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	743	-	-	68.8

Vehicle Results

Average Speed, mi/h	68.8	Percent Followers, %	28.4
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	202	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.61	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2717
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	203	Opposing Demand Flow Rate, veh/h	138
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.31617	Speed Power Coefficient (p)	0.55915
PF Slope Coefficient (m)	-1.17188	PF Power Coefficient (p)	0.83428
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2717	-	-	68.8

Vehicle Results

Average Speed, mi/h	68.8	Percent Followers, %	26.7
Segment Travel Time, minutes	0.45	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	203	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.84	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1013
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	203	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29345	PF Power Coefficient (p)	0.75792
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1013	-	-	68.2

Vehicle Results

Average Speed, mi/h	68.2	Percent Followers, %	32.1
Segment Travel Time, minutes	0.17	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	203	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.84	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4569
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	203	Opposing Demand Flow Rate, veh/h	138
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33807	Speed Power Coefficient (p)	0.55915
PF Slope Coefficient (m)	-1.14272	PF Power Coefficient (p)	0.84376
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	4569	-	-	68.8

Vehicle Results

Average Speed, mi/h	68.8	Percent Followers, %	25.8
Segment Travel Time, minutes	0.75	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	203	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.84	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5676
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	203	Opposing Demand Flow Rate, veh/h	138
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34904	Speed Power Coefficient (p)	0.55915
PF Slope Coefficient (m)	-1.13517	PF Power Coefficient (p)	0.84345
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5676	-	-	68.8

Vehicle Results

Average Speed, mi/h	68.8	Percent Followers, %	25.6
Segment Travel Time, minutes	0.94	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	203	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.71	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 12

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	657
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	203	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29350	PF Power Coefficient (p)	0.75785
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	657	-	-	68.2

Vehicle Results

Average Speed, mi/h	68.2	Percent Followers, %	32.1
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	203	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.71	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 13

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	6009
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	203	Opposing Demand Flow Rate, veh/h	138
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35213	Speed Power Coefficient (p)	0.55915
PF Slope Coefficient (m)	-1.13386	PF Power Coefficient (p)	0.84277

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6009	-	-	68.8

Vehicle Results

Average Speed, mi/h	68.8	Percent Followers, %	25.6
Segment Travel Time, minutes	0.99	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	203	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.71	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	891
Measured FFS	Measured	Free-Flow Speed, mi/h	50.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	203	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.12

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	50.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.47375	PF Power Coefficient (p)	0.71164
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	891	-	-	48.2

Vehicle Results

Average Speed, mi/h	48.2	Percent Followers, %	37.8
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	1.6
Vehicle LOS	A		

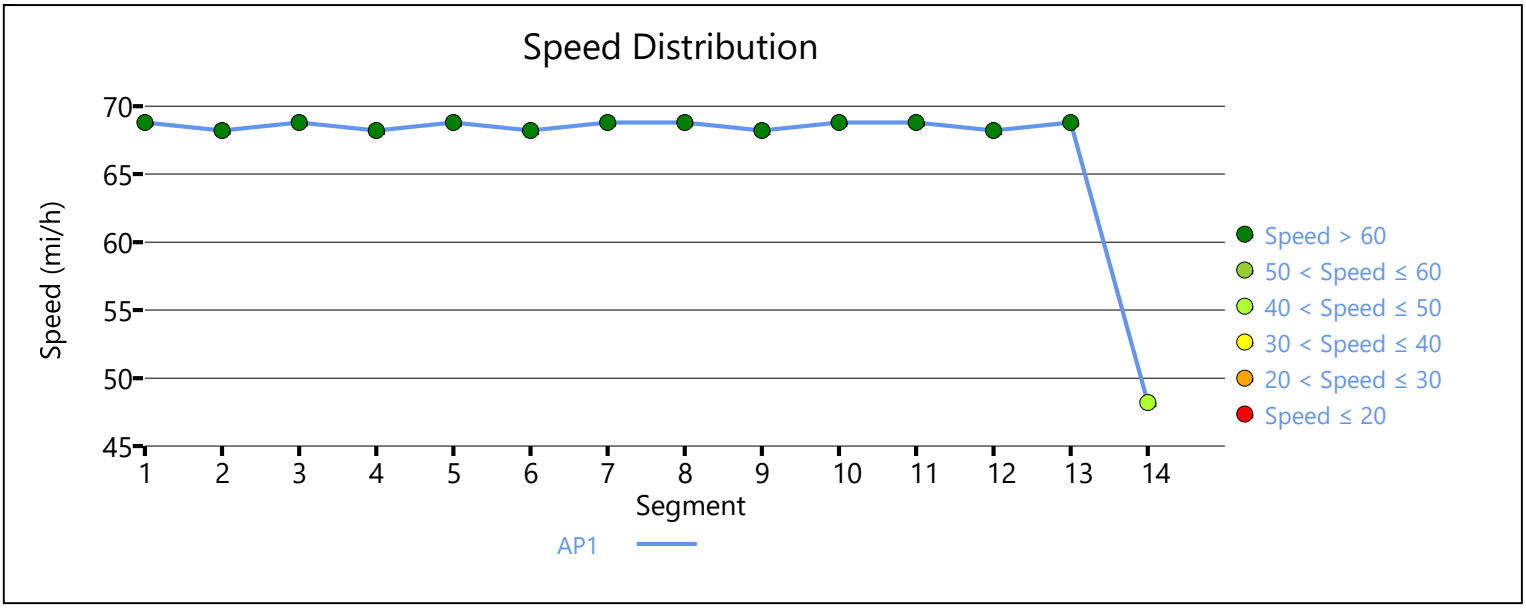
Bicycle Results

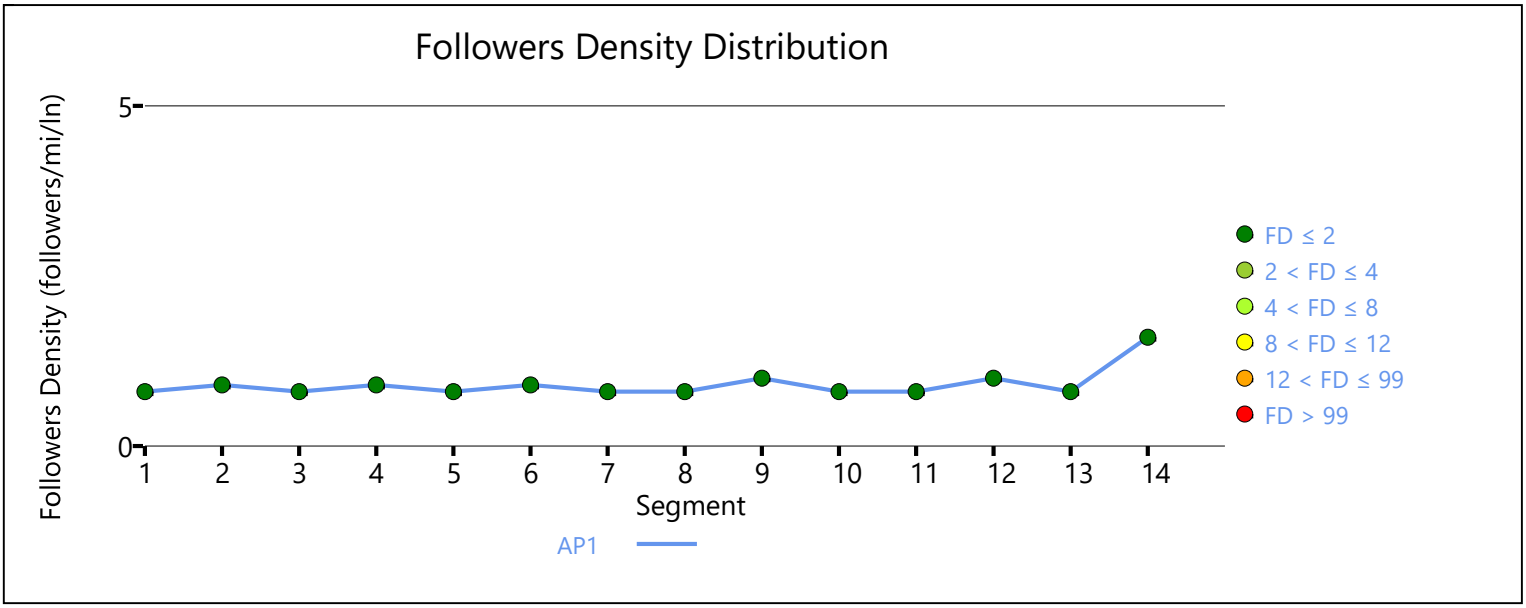
Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	203	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.49	Bicycle Effective Speed Factor	4.42
Bicycle LOS	B		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	272	0.08	0.8	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2040 NB
Jurisdiction	SDDOT	Time Analyzed	PM Peak
Project Description	West of Hartford SD 38 EB	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1069
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	127	Opposing Demand Flow Rate, veh/h	227
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32852	Speed Power Coefficient (p)	0.53193
PF Slope Coefficient (m)	-1.24407	PF Power Coefficient (p)	0.80506
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1069	-	-	69.4

Vehicle Results

Average Speed, mi/h	69.4	Percent Followers, %	21.1
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	127	Bicycle Effective Width, ft	32
Bicycle LOS Score	1.14	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	664
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	127	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	664	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.7
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	127	Bicycle Effective Width, ft	32
Bicycle LOS Score	1.14	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1871
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	127	Opposing Demand Flow Rate, veh/h	227
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33833	Speed Power Coefficient (p)	0.53193
PF Slope Coefficient (m)	-1.21872	PF Power Coefficient (p)	0.81609
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1871	-	-	69.4

Vehicle Results

Average Speed, mi/h	69.4	Percent Followers, %	20.3
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	127	Bicycle Effective Width, ft	32
Bicycle LOS Score	1.14	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	925
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	127	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	925	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.7
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	127	Bicycle Effective Width, ft	32
Bicycle LOS Score	1.14	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4476
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	139	Opposing Demand Flow Rate, veh/h	227
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.37181	Speed Power Coefficient (p)	0.53193
PF Slope Coefficient (m)	-1.16375	PF Power Coefficient (p)	0.83587
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4476	-	-	69.2

Vehicle Results

Average Speed, mi/h	69.2	Percent Followers, %	20.0
Segment Travel Time, minutes	0.73	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	139	Bicycle Effective Width, ft	31
Bicycle LOS Score	1.50	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	896
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	127	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	896	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.7
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	127	Bicycle Effective Width, ft	32
Bicycle LOS Score	1.14	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	743
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	127	Opposing Demand Flow Rate, veh/h	227
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.07

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32852	Speed Power Coefficient (p)	0.53193
PF Slope Coefficient (m)	-1.24407	PF Power Coefficient (p)	0.80506
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	743	-	-	69.4

Vehicle Results

Average Speed, mi/h	69.4	Percent Followers, %	21.1
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	127	Bicycle Effective Width, ft	32
Bicycle LOS Score	1.14	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2717
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	134	Opposing Demand Flow Rate, veh/h	0
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.19461	Speed Power Coefficient (p)	0.67576
PF Slope Coefficient (m)	-1.07584	PF Power Coefficient (p)	0.86675
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2717	-	-	69.6

Vehicle Results

Average Speed, mi/h	69.6	Percent Followers, %	17.2
Segment Travel Time, minutes	0.44	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	134	Bicycle Effective Width, ft	31
Bicycle LOS Score	0.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1013
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	134	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29345	PF Power Coefficient (p)	0.75792
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1013	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	24.6
Segment Travel Time, minutes	0.17	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	134	Bicycle Effective Width, ft	31
Bicycle LOS Score	0.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4569
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	134	Opposing Demand Flow Rate, veh/h	230
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.37357	Speed Power Coefficient (p)	0.53135
PF Slope Coefficient (m)	-1.16352	PF Power Coefficient (p)	0.83544
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	4569	-	-	69.3

Vehicle Results

Average Speed, mi/h	69.3	Percent Followers, %	19.5
Segment Travel Time, minutes	0.75	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	134	Bicycle Effective Width, ft	31
Bicycle LOS Score	0.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5676
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	136	Opposing Demand Flow Rate, veh/h	230
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.38454	Speed Power Coefficient (p)	0.53135
PF Slope Coefficient (m)	-1.15581	PF Power Coefficient (p)	0.83503
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5676	-	-	69.2

Vehicle Results

Average Speed, mi/h	69.2	Percent Followers, %	19.7
Segment Travel Time, minutes	0.93	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	136	Bicycle Effective Width, ft	31
Bicycle LOS Score	0.58	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 12

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	657
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	136	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29350	PF Power Coefficient (p)	0.75785
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	657	-	-	68.9

Vehicle Results			
Average Speed, mi/h	68.9	Percent Followers, %	24.9
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	136	Bicycle Effective Width, ft	31
Bicycle LOS Score	0.58	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 13

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	6009
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	136	Opposing Demand Flow Rate, veh/h	230
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.38763	Speed Power Coefficient (p)	0.53135
PF Slope Coefficient (m)	-1.15447	PF Power Coefficient (p)	0.83434

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6009	-	-	69.2

Vehicle Results

Average Speed, mi/h	69.2	Percent Followers, %	19.7
Segment Travel Time, minutes	0.99	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	136	Bicycle Effective Width, ft	31
Bicycle LOS Score	0.58	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	891
Measured FFS	Measured	Free-Flow Speed, mi/h	50.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	136	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	50.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.47375	PF Power Coefficient (p)	0.71164
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	891	-	-	48.9

Vehicle Results

Average Speed, mi/h	48.9	Percent Followers, %	30.0
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	0.8
Vehicle LOS	A		

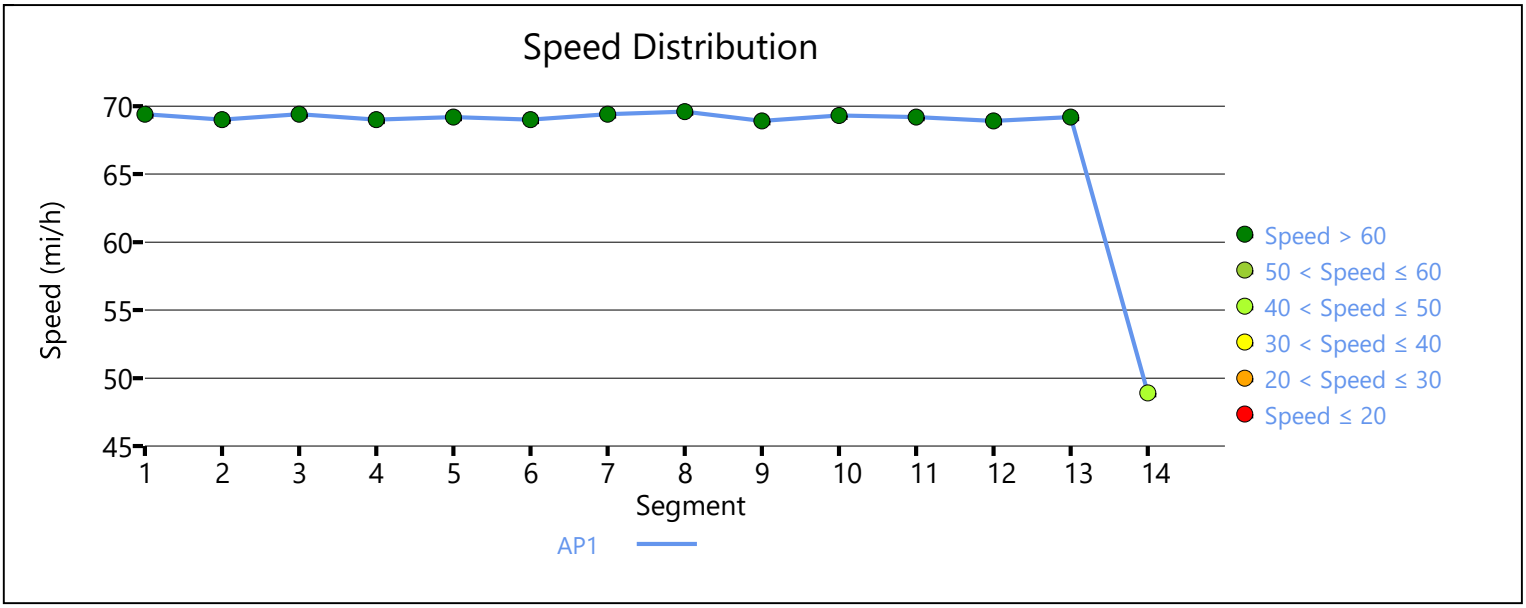
Bicycle Results

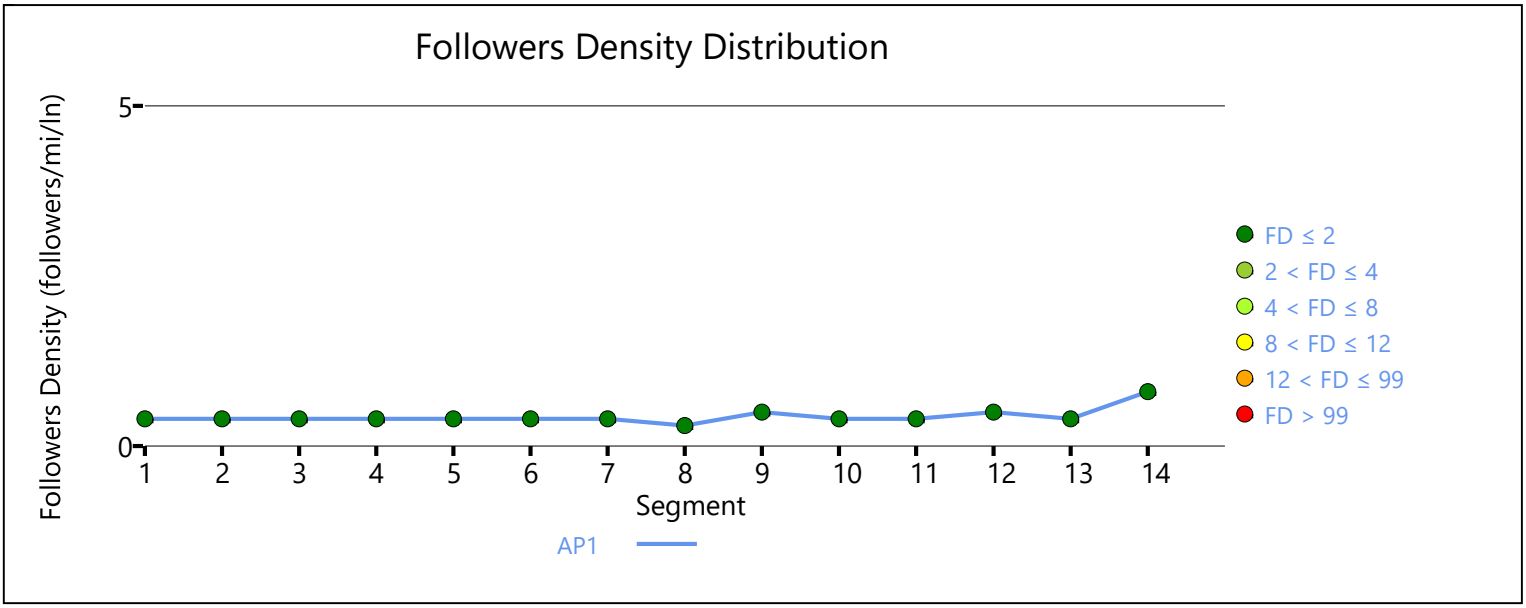
Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	136	Bicycle Effective Width, ft	31
Bicycle LOS Score	0.36	Bicycle Effective Speed Factor	4.42
Bicycle LOS	A		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	180	0.03	0.4	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2040 NB
Jurisdiction	SDDOT	Time Analyzed	AM Peak
Project Description	WB 38 West of Hartford	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	10549
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	138	Opposing Demand Flow Rate, veh/h	203
Peak Hour Factor	0.88	Total Trucks, %	12.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.41409	Speed Power Coefficient (p)	0.53829
PF Slope Coefficient (m)	-1.15918	PF Power Coefficient (p)	0.81052
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	10549	-	-	69.2

Vehicle Results

Average Speed, mi/h	69.2	Percent Followers, %	20.7
Segment Travel Time, minutes	1.73	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	138	Bicycle Effective Width, ft	31
Bicycle LOS Score	4.24	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2793
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	138	Opposing Demand Flow Rate, veh/h	203
Peak Hour Factor	0.88	Total Trucks, %	12.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34348	Speed Power Coefficient (p)	0.53829
PF Slope Coefficient (m)	-1.18524	PF Power Coefficient (p)	0.83047
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2793	-	-	69.3

Vehicle Results

Average Speed, mi/h	69.3	Percent Followers, %	20.4
Segment Travel Time, minutes	0.46	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	138	Bicycle Effective Width, ft	31
Bicycle LOS Score	4.24	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3825
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	138	Opposing Demand Flow Rate, veh/h	203
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35622	Speed Power Coefficient (p)	0.53829
PF Slope Coefficient (m)	-1.16728	PF Power Coefficient (p)	0.83549
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3825	-	-	69.3

Vehicle Results

Average Speed, mi/h	69.3	Percent Followers, %	19.9
Segment Travel Time, minutes	0.63	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	138	Bicycle Effective Width, ft	31
Bicycle LOS Score	0.48	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	791
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	138	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29355	PF Power Coefficient (p)	0.75779
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	791	-	-	68.8

Vehicle Results

Average Speed, mi/h	68.8	Percent Followers, %	25.0
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	138	Bicycle Effective Width, ft	31
Bicycle LOS Score	0.48	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3414
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	138	Opposing Demand Flow Rate, veh/h	203
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35138	Speed Power Coefficient (p)	0.53829
PF Slope Coefficient (m)	-1.17373	PF Power Coefficient (p)	0.83350
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3414	-	-	69.3

Vehicle Results

Average Speed, mi/h	69.3	Percent Followers, %	20.1
Segment Travel Time, minutes	0.56	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	138	Bicycle Effective Width, ft	31
Bicycle LOS Score	0.48	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	286
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	138	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29355	PF Power Coefficient (p)	0.75779
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	286	-	-	68.8

Vehicle Results

Average Speed, mi/h	68.8	Percent Followers, %	25.0
Segment Travel Time, minutes	0.05	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	138	Bicycle Effective Width, ft	31
Bicycle LOS Score	0.48	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	463
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	142	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29353	PF Power Coefficient (p)	0.75782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	463	-	-	68.8

Vehicle Results

Average Speed, mi/h	68.8	Percent Followers, %	25.5
Segment Travel Time, minutes	0.08	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	142	Bicycle Effective Width, ft	31
Bicycle LOS Score	0.54	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4822
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	142	Opposing Demand Flow Rate, veh/h	202
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36656	Speed Power Coefficient (p)	0.53861
PF Slope Coefficient (m)	-1.15601	PF Power Coefficient (p)	0.83777
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4822	-	-	69.2

Vehicle Results

Average Speed, mi/h	69.2	Percent Followers, %	20.2
Segment Travel Time, minutes	0.79	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	142	Bicycle Effective Width, ft	31
Bicycle LOS Score	0.54	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	861
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	142	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29353	PF Power Coefficient (p)	0.75782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	861	-	-	68.8

Vehicle Results

Average Speed, mi/h	68.8	Percent Followers, %	25.5
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	142	Bicycle Effective Width, ft	31
Bicycle LOS Score	0.54	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1556
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	142	Opposing Demand Flow Rate, veh/h	202
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32409	Speed Power Coefficient (p)	0.53861
PF Slope Coefficient (m)	-1.22723	PF Power Coefficient (p)	0.81163
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1556	-	-	69.2

Vehicle Results

Average Speed, mi/h	69.2	Percent Followers, %	22.3
Segment Travel Time, minutes	0.26	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	142	Bicycle Effective Width, ft	31
Bicycle LOS Score	0.54	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	799
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	142	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29353	PF Power Coefficient (p)	0.75782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	799	-	-	68.8

Vehicle Results

Average Speed, mi/h	68.8	Percent Followers, %	25.5
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	142	Bicycle Effective Width, ft	31
Bicycle LOS Score	0.54	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 12

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	857
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	142	Opposing Demand Flow Rate, veh/h	2026
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.63885	Speed Power Coefficient (p)	0.40883
PF Slope Coefficient (m)	-1.27385	PF Power Coefficient (p)	0.74571
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	857	-	-	68.7

Vehicle Results			
Average Speed, mi/h	68.7	Percent Followers, %	25.7
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	142	Bicycle Effective Width, ft	31
Bicycle LOS Score	0.54	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 13

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1288
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	142	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39677	PF Power Coefficient (p)	0.73640

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1288	-	-	58.8

Vehicle Results

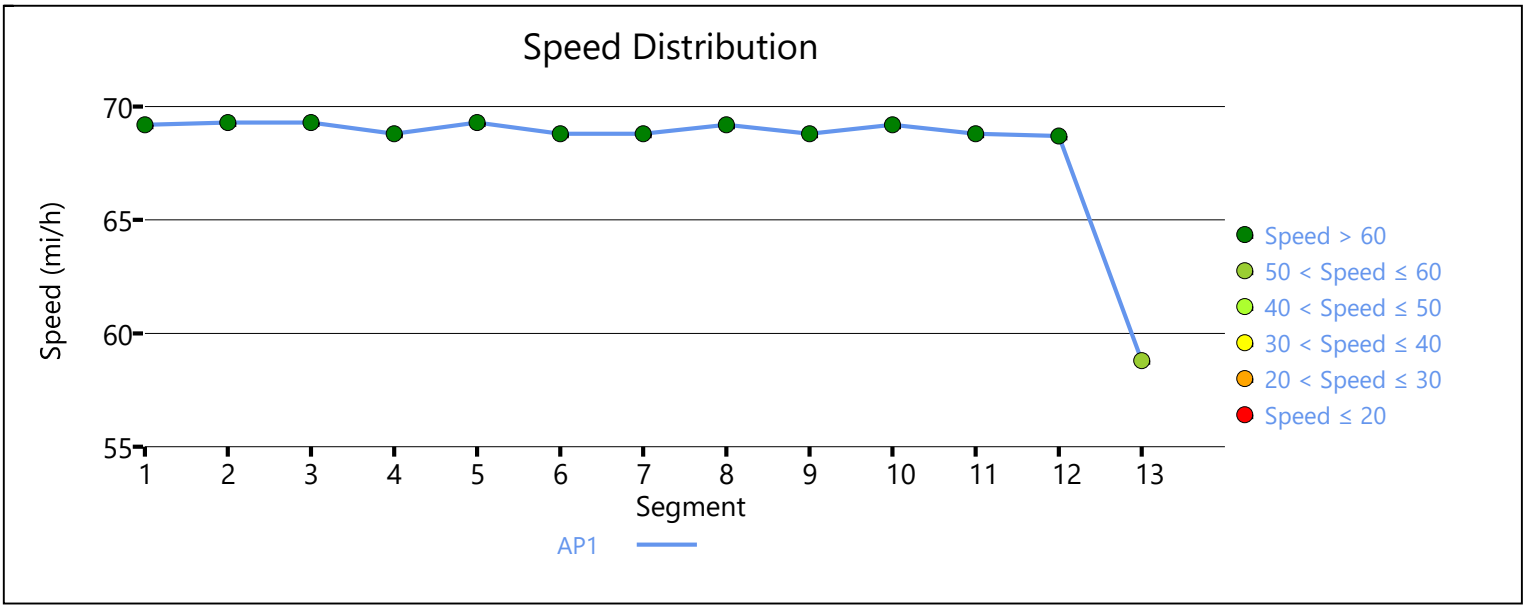
Average Speed, mi/h	58.8	Percent Followers, %	28.2
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

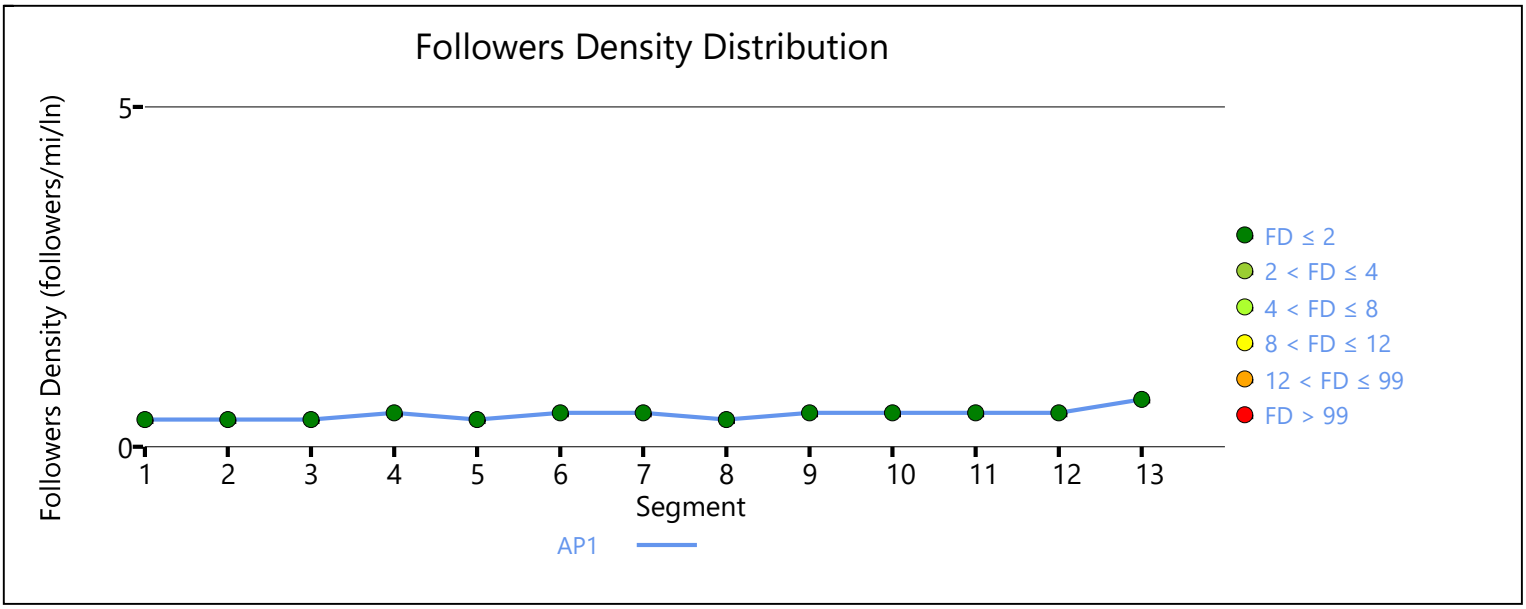
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	142	Bicycle Effective Width, ft	31
Bicycle LOS Score	0.45	Bicycle Effective Speed Factor	4.79
Bicycle LOS	A		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	187	0.03	0.4	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2040 NB
Jurisdiction	SDDOT	Time Analyzed	PM Peak
Project Description	WB 38 West of Hartford	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	10549
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	230	Opposing Demand Flow Rate, veh/h	136
Peak Hour Factor	0.88	Total Trucks, %	1.94
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.38729	Speed Power Coefficient (p)	0.55957
PF Slope Coefficient (m)	-1.14432	PF Power Coefficient (p)	0.81520
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	10549	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	29.2
Segment Travel Time, minutes	1.75	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	230	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.54	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2793
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	230	Opposing Demand Flow Rate, veh/h	136
Peak Hour Factor	0.88	Total Trucks, %	1.94
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.31669	Speed Power Coefficient (p)	0.55957
PF Slope Coefficient (m)	-1.16990	PF Power Coefficient (p)	0.83492
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2793	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	29.0
Segment Travel Time, minutes	0.46	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	230	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.54	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3825
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	230	Opposing Demand Flow Rate, veh/h	134
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32842	Speed Power Coefficient (p)	0.56040
PF Slope Coefficient (m)	-1.15048	PF Power Coefficient (p)	0.84195
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3825	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	28.3
Segment Travel Time, minutes	0.63	Follower Density (FD), followers/mi/ln	0.9
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	230	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.61	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	791
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	230	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29358	PF Power Coefficient (p)	0.75776
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	791	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	34.6
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	230	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.61	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3414
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	230	Opposing Demand Flow Rate, veh/h	134
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32358	Speed Power Coefficient (p)	0.56040
PF Slope Coefficient (m)	-1.15683	PF Power Coefficient (p)	0.83989
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3414	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	28.5
Segment Travel Time, minutes	0.57	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	230	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.61	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	286
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	230	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29358	PF Power Coefficient (p)	0.75776
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	286	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	34.6
Segment Travel Time, minutes	0.05	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	230	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.61	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	463
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	227	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29347	PF Power Coefficient (p)	0.75789
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	463	-	-	68.1

Vehicle Results

Average Speed, mi/h	68.1	Percent Followers, %	34.3
Segment Travel Time, minutes	0.08	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	227	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.84	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4822
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	227	Opposing Demand Flow Rate, veh/h	127
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33608	Speed Power Coefficient (p)	0.56297
PF Slope Coefficient (m)	-1.13758	PF Power Coefficient (p)	0.84510
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4822	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.8
Segment Travel Time, minutes	0.80	Follower Density (FD), followers/mi/ln	0.9
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	227	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.84	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	861
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	227	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29347	PF Power Coefficient (p)	0.75789
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	861	-	-	68.1

Vehicle Results

Average Speed, mi/h	68.1	Percent Followers, %	34.3
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	227	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.84	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1556
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	227	Opposing Demand Flow Rate, veh/h	127
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.29360	Speed Power Coefficient (p)	0.56297
PF Slope Coefficient (m)	-1.20750	PF Power Coefficient (p)	0.81818
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1556	-	-	68.7

Vehicle Results

Average Speed, mi/h	68.7	Percent Followers, %	30.2
Segment Travel Time, minutes	0.26	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	227	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.84	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	799
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	227	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29347	PF Power Coefficient (p)	0.75789
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	799	-	-	68.1

Vehicle Results

Average Speed, mi/h	68.1	Percent Followers, %	34.3
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	227	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.84	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 12

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	857
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	227	Opposing Demand Flow Rate, veh/h	127
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.28919	Speed Power Coefficient (p)	0.56297
PF Slope Coefficient (m)	-1.21919	PF Power Coefficient (p)	0.81279
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	857	-	-	68.7

Vehicle Results

Average Speed, mi/h	68.7	Percent Followers, %	30.6
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	1.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	227	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.84	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 13

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1288
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	227	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.13

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39671	PF Power Coefficient (p)	0.73647

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1288	-	-	58.1

Vehicle Results

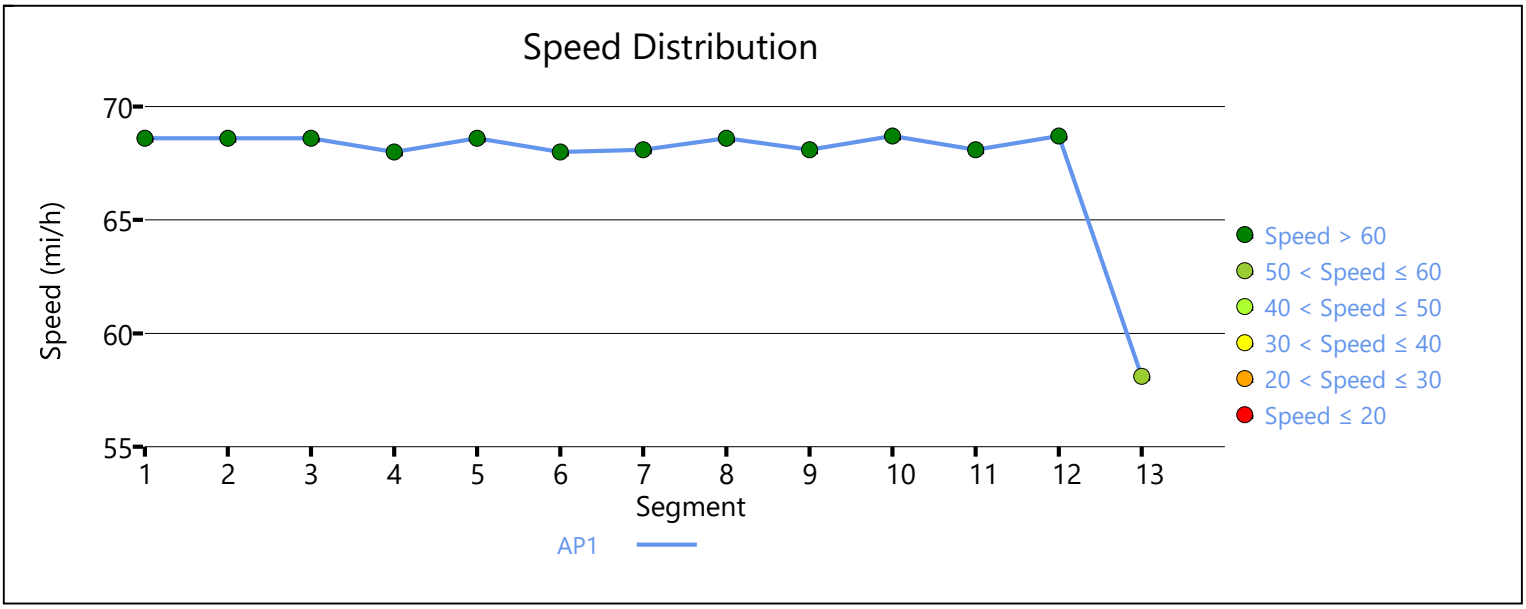
Average Speed, mi/h	58.1	Percent Followers, %	37.4
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

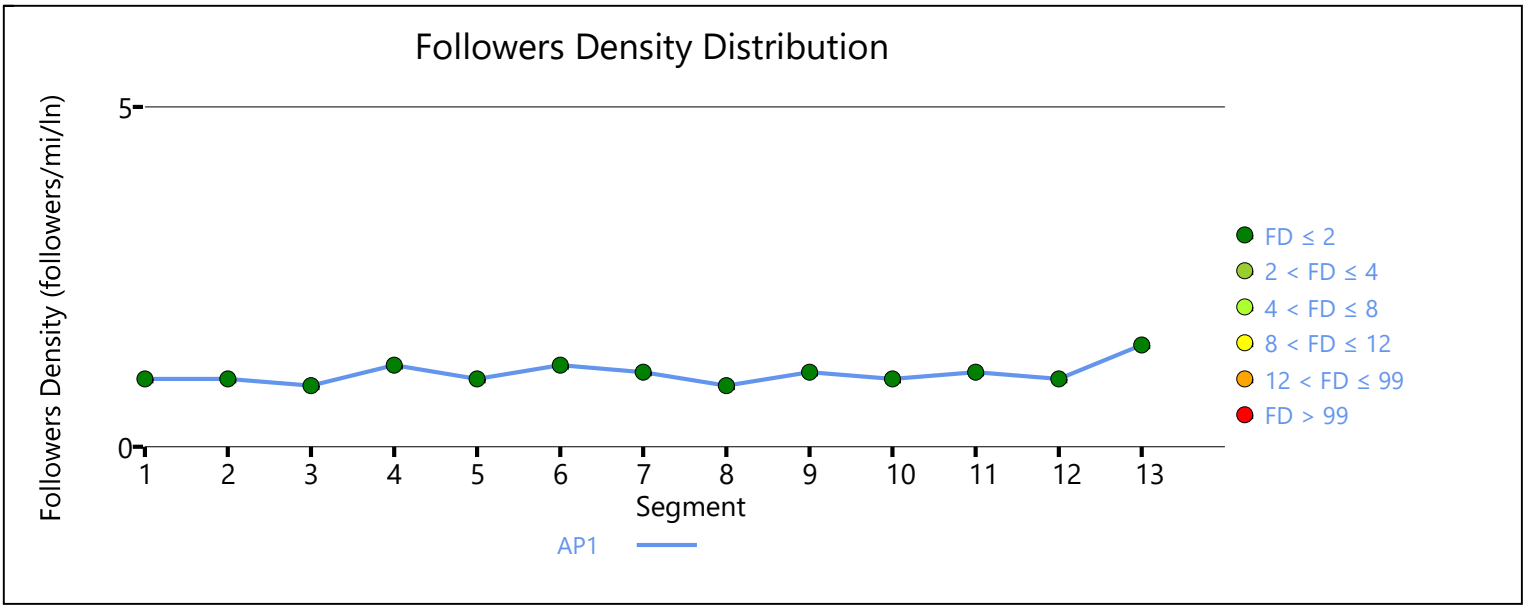
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	227	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.74	Bicycle Effective Speed Factor	4.79
Bicycle LOS	C		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	308	0.10	1.0	A





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HCS Two-Way Stop-Control Report

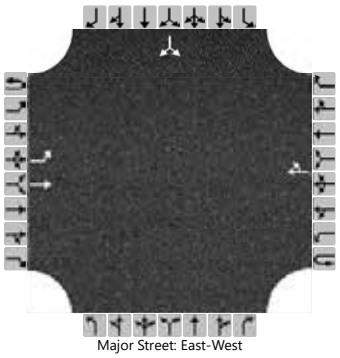
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & SD 19
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	SD 19
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	T					TR							LR	
Volume (veh/h)		55	165				120	50						70		95
Percent Heavy Vehicles (%)		30												9		11
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage					Undivided											

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.40												6.49		6.31
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.47												3.58		3.40

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		60													179	
Capacity, c (veh/h)		1238													677	
v/c Ratio		0.05													0.26	
95% Queue Length, Q_{95} (veh)		0.2													1.1	
Control Delay (s/veh)		8.1													12.2	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)		2.0												12.2		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

General Information

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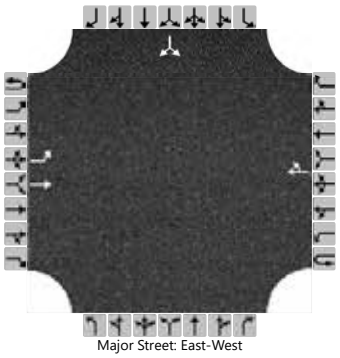
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & SD 19
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	SD 19
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	T					TR							LR	
Volume (veh/h)		85	115				170	80						40		50
Percent Heavy Vehicles (%)		2												10		14
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.12												6.50		6.34
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.22												3.59		3.43

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		92													98	
Capacity, c (veh/h)		1291													593	
v/c Ratio		0.07													0.16	
95% Queue Length, Q_{95} (veh)		0.2													0.6	
Control Delay (s/veh)		8.0													12.3	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)	3.4												12.3			
Approach LOS	A												B			

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HCS Two-Way Stop-Control Report

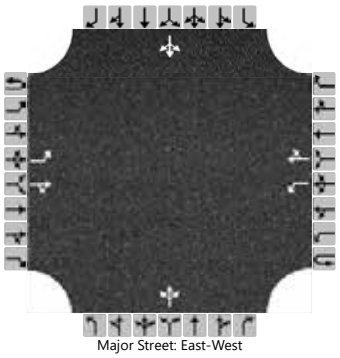
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 459th
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	459th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		0	215	7		2	155	0		15	0	7		9	0	0
Percent Heavy Vehicles (%)		3				3				13	0	0		0	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.23	6.50	6.20		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.62	4.00	3.30		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				2					24				10	
Capacity, c (veh/h)		1403				1319					596				552	
v/c Ratio		0.00				0.00					0.04				0.02	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.1				0.1	
Control Delay (s/veh)		7.6				7.7					11.3				11.6	
Level of Service (LOS)		A				A					B				B	
Approach Delay (s/veh)	0.0				0.1				11.3				11.6			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

General Information

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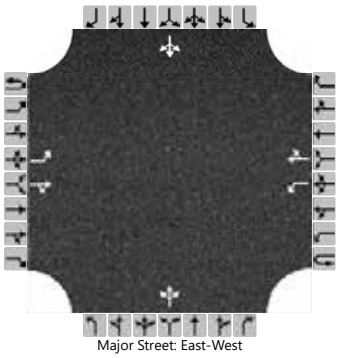
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 459th
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	459th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		0	145	9		15	245	2		15	0	4		2	2	0
Percent Heavy Vehicles (%)		0				0				13	0	0		0	100	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.23	6.50	6.20		7.10	7.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.62	4.00	3.30		3.50	4.90	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				16					21				4	
Capacity, c (veh/h)		1307				1423					534				429	
v/c Ratio		0.00				0.01					0.04				0.01	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.1				0.0	
Control Delay (s/veh)		7.8				7.6					12.0				13.5	
Level of Service (LOS)		A				A					B				B	
Approach Delay (s/veh)	0.0				0.4				12.0				13.5			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

General Information

Analyst	NM
Agency/Co.	HRG
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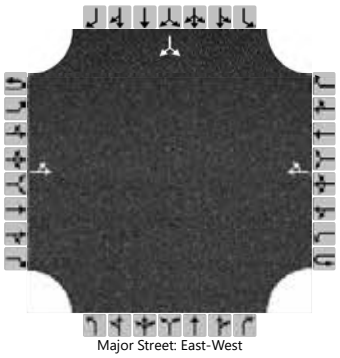
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 Speedway
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 Expressway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	230				165	0						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													0	
Capacity, c (veh/h)		1390													0	
v/c Ratio		0.00														
95% Queue Length, Q_{95} (veh)		0.0														
Control Delay (s/veh)		7.6	0.0													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)	0.0															
Approach LOS	A															

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HCS Two-Way Stop-Control Report

General Information

Analyst	NM
Agency/Co.	HRG
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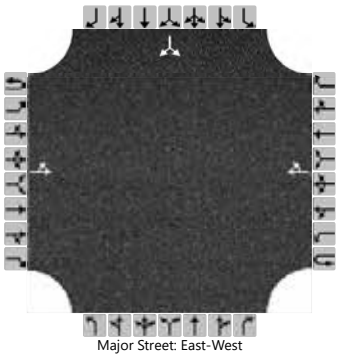
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 Speedway
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 Expressway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	165				260	0						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													0	
Capacity, c (veh/h)		1274													0	
v/c Ratio		0.00														
95% Queue Length, Q_{95} (veh)		0.0														
Control Delay (s/veh)		7.8	0.0													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)	0.0															
Approach LOS	A															

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HCS Two-Way Stop-Control Report

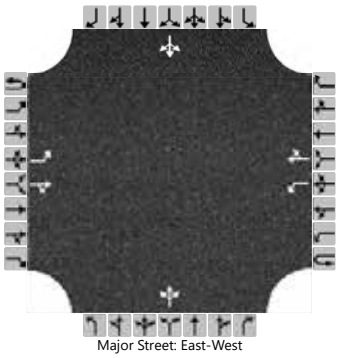
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 463rd Ave / Western Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	463rd Ave / Western Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		9	180	80		60	110	30		65	75	90		40	80	5
Percent Heavy Vehicles (%)		3				3				14	2	6		0	7	33
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.24	6.52	6.26		7.10	6.57	6.53
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.63	4.02	3.35		3.50	4.06	3.60

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		10				65					250				136	
Capacity, c (veh/h)		1422				1274					463				376	
v/c Ratio		0.01				0.05					0.54				0.36	
95% Queue Length, Q_{95} (veh)		0.0				0.2					3.2				1.6	
Control Delay (s/veh)		7.5				8.0					21.5				19.9	
Level of Service (LOS)		A				A					C				C	
Approach Delay (s/veh)	0.3				2.4				21.5				19.9			
Approach LOS	A				A				C				C			

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HCS Two-Way Stop-Control Report

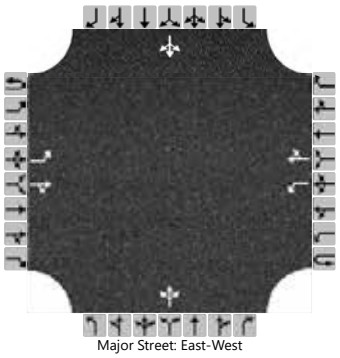
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 463rd Ave / Western Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	463rd Ave / Western Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		15	125	55		120	200	60		70	85	155		55	100	25
Percent Heavy Vehicles (%)		22				3				0	11	4		0	4	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.32				4.13				7.10	6.61	6.24		7.10	6.54	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.40				2.23				3.50	4.10	3.34		3.50	4.04	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		16				130					337				196	
Capacity, c (veh/h)		1173				1371					378				268	
v/c Ratio		0.01				0.10					0.89				0.73	
95% Queue Length, Q_{95} (veh)		0.0				0.3					9.0				5.2	
Control Delay (s/veh)		8.1				7.9					56.5				47.6	
Level of Service (LOS)		A				A					F				E	
Approach Delay (s/veh)	0.6				2.5				56.5				47.6			
Approach LOS	A				A				F				E			

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HCS Two-Way Stop-Control Report

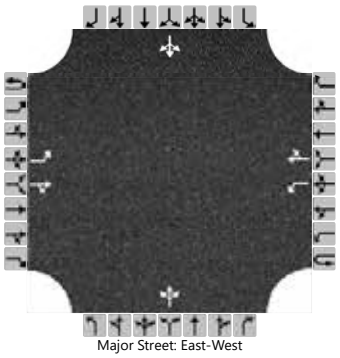
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Main Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Main Ave (9th St)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		2	260	30		40	195	20		40	5	85		6	10	4
Percent Heavy Vehicles (%)		0				11				5	0	2		0	17	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.21				7.15	6.50	6.22		7.10	6.67	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.30				3.55	4.00	3.32		3.50	4.15	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2				43					141				22	
Capacity, c (veh/h)		1346				1196					555				403	
v/c Ratio		0.00				0.04					0.25				0.05	
95% Queue Length, Q_{95} (veh)		0.0				0.1					1.0				0.2	
Control Delay (s/veh)		7.7				8.1					13.7				14.4	
Level of Service (LOS)		A				A					B				B	
Approach Delay (s/veh)	0.1				1.3				13.7				14.4			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

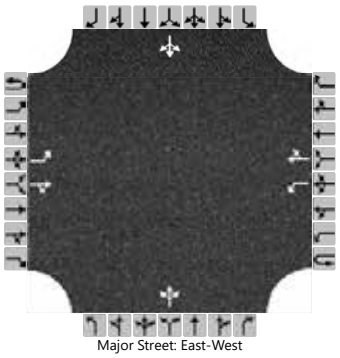
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Main Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Main Ave (9th St)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		10	250	45		65	335	60		35	20	55		40	30	7
Percent Heavy Vehicles (%)		0				0				5	0	0		0	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.15	6.50	6.20		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.55	4.00	3.30		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11				71					120				84	
Capacity, c (veh/h)		1141				1251					366				258	
v/c Ratio		0.01				0.06					0.33				0.32	
95% Queue Length, Q_{95} (veh)		0.0				0.2					1.4				1.4	
Control Delay (s/veh)		8.2				8.1					19.5				25.5	
Level of Service (LOS)		A				A					C				D	
Approach Delay (s/veh)	0.3				1.1				19.5				25.5			
Approach LOS	A				A				C				D			

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HCS Two-Way Stop-Control Report

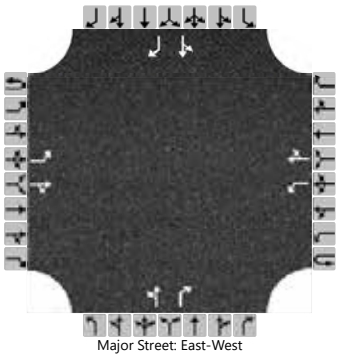
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	AM
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Vandemark Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Vandemark Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	1		0	1	1
Configuration		L		TR		L		TR		LT		R		LT		R
Volume (veh/h)		25	370	10		8	240	25		9	5	10		40	2	25
Percent Heavy Vehicles (%)		0				0				40	0	0		0	0	7
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized										No				No		
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.50	6.50	6.20		7.10	6.50	6.27
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.86	4.00	3.30		3.50	4.00	3.36

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		27				9				15		11		46		27
Capacity, c (veh/h)		1286				1157				286		648		310		752
v/c Ratio		0.02				0.01				0.05		0.02		0.15		0.04
95% Queue Length, Q_{95} (veh)		0.1				0.0				0.2		0.1		0.5		0.1
Control Delay (s/veh)		7.9				8.1				18.3		10.7		18.6		10.0
Level of Service (LOS)		A				A				C		B		C		A
Approach Delay (s/veh)	0.5				0.2				15.1				15.4			
Approach LOS	A				A				C				C			

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HCS Two-Way Stop-Control Report

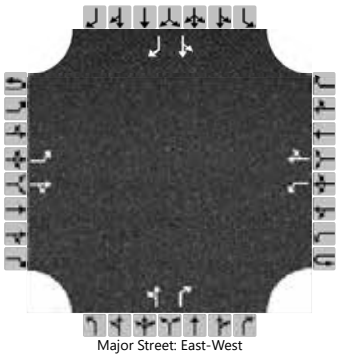
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	PM
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Vandemark Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Vandemark Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	1		0	1	1
Configuration		L		TR		L		TR		LT		R		LT		R
Volume (veh/h)		20	255	4		5	475	45		0	0	9		30	0	25
Percent Heavy Vehicles (%)		0				0				0	0	100		0	0	7
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized										No				No		
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	7.20		7.10	6.50	6.27
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	4.20		3.50	4.00	3.36

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		22				5				0		10		33		27
Capacity, c (veh/h)		1017				1293				0		574		262		532
v/c Ratio		0.02				0.00						0.02		0.12		0.05
95% Queue Length, Q_{95} (veh)		0.1				0.0						0.1		0.4		0.2
Control Delay (s/veh)		8.6				7.8						11.4		20.7		12.1
Level of Service (LOS)		A				A						B		C		B
Approach Delay (s/veh)	0.6				0.1								16.8			
Approach LOS	A				A								C			

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HCS Two-Way Stop-Control Report

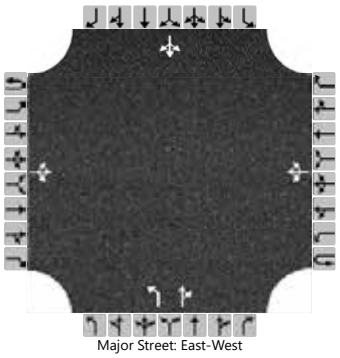
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 2nd St
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	2nd St
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		1	1	0		0	1	0
Configuration			LTR				LTR			L		TR			LTR	
Volume (veh/h)		20	325	10		95	200	15		5	20	155		35	50	25
Percent Heavy Vehicles (%)		10				16				33	8	5		0	4	8
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.20				4.26				7.43	6.58	6.25		7.10	6.54	6.28
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.29				2.34				3.80	4.07	3.35		3.50	4.04	3.37

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		22				103				5		190			120	
Capacity, c (veh/h)		1263				1121				169		568			255	
v/c Ratio		0.02				0.09				0.03		0.33			0.47	
95% Queue Length, Q_{95} (veh)		0.1				0.3				0.1		1.5			2.3	
Control Delay (s/veh)		7.9	0.2	0.2		8.5	0.9	0.9		27.0		14.5			31.1	
Level of Service (LOS)		A	A	A		A	A	A		D		B			D	
Approach Delay (s/veh)	0.6				3.2				14.8				31.1			
Approach LOS	A				A				B				D			

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HCS Two-Way Stop-Control Report

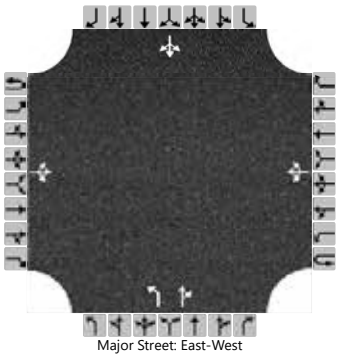
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 2nd St
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	2nd St
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		1	1	0		0	1	0
Configuration			LTR				LTR			L		TR			LTR	
Volume (veh/h)		25	235	9		130	490	25		15	25	65		15	30	20
Percent Heavy Vehicles (%)		0				0				0	0	6		0	6	0
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.26		7.10	6.56	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.35		3.50	4.05	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		27				141				16		98			71	
Capacity, c (veh/h)		1001				1310				114		370			177	
v/c Ratio		0.03				0.11				0.14		0.26			0.40	
95% Queue Length, Q_{95} (veh)		0.1				0.4				0.5		1.0			1.8	
Control Delay (s/veh)		8.7	0.3	0.3		8.1	1.3	1.3		41.7		18.2			38.3	
Level of Service (LOS)		A	A	A		A	A	A		E		C			E	
Approach Delay (s/veh)	1.1				2.6				21.6				38.3			
Approach LOS	A				A				C				E			

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HCS Two-Way Stop-Control Report

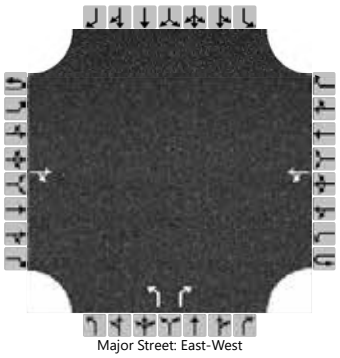
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & West Central HS Entrance
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	West Central HS Entrance
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		1	0	1		0	0	0
Configuration				TR		LT				L		R				
Volume (veh/h)			425	90		55	285			35		50				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						60				38		54				
Capacity, c (veh/h)						1021				274		567				
v/c Ratio						0.06				0.14		0.10				
95% Queue Length, Q_{95} (veh)						0.2				0.5		0.3				
Control Delay (s/veh)						8.7	0.6			20.2		12.0				
Level of Service (LOS)						A	A			C		B				
Approach Delay (s/veh)						1.9				15.4						
Approach LOS						A				C						

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HCS Two-Way Stop-Control Report

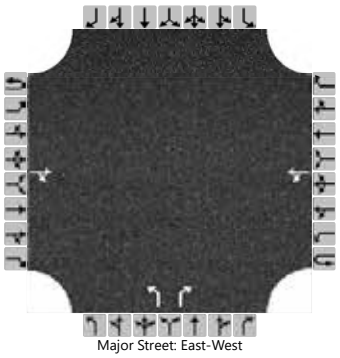
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & West Central HS Entrance
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	West Central HS Entrance
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		1	0	1		0	0	0
Configuration				TR		LT				L		R				
Volume (veh/h)			305	4		4	620			15		15				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						4				16		16				
Capacity, c (veh/h)						1235				264		713				
v/c Ratio						0.00				0.06		0.02				
95% Queue Length, Q_{95} (veh)						0.0				0.2		0.1				
Control Delay (s/veh)						7.9	0.0			19.5		10.2				
Level of Service (LOS)						A	A			C		B				
Approach Delay (s/veh)					0.1				14.8							
Approach LOS					A				B							

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HCS Two-Way Stop-Control Report

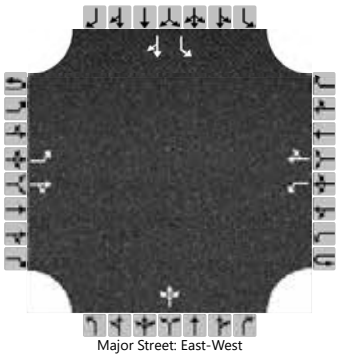
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Railroad Street
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Railroad St
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		1	1	0
Configuration		L		TR		L		TR			LTR			L		TR
Volume (veh/h)		4	465	0		15	270	95		2	0	30		145	4	5
Percent Heavy Vehicles (%)		0				0				0	0	15		0	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.35		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.44		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		4				16					35			158		10
Capacity, c (veh/h)		1173				1070					511			244		419
v/c Ratio		0.00				0.02					0.07			0.65		0.02
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.2			4.0		0.1
Control Delay (s/veh)		8.1				8.4					12.6			43.1		13.8
Level of Service (LOS)		A				A					B			E		B
Approach Delay (s/veh)	0.1				0.3				12.6				41.4			
Approach LOS	A				A				B				E			

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HCS Two-Way Stop-Control Report

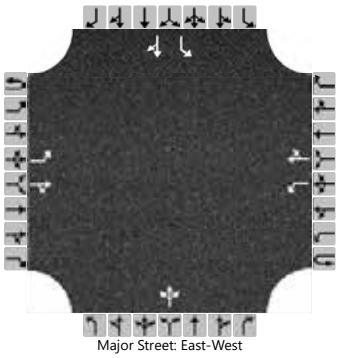
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Railroad Street
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Railroad St
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		1	1	0
Configuration		L		TR		L		TR			LTR			L		TR
Volume (veh/h)		4	340	4		15	560	155		2	2	15		85	9	5
Percent Heavy Vehicles (%)		0				40				0	0	15		5	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.50				7.10	6.50	6.35		7.15	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.56				3.50	4.00	3.44		3.55	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		4				16					21			92		15
Capacity, c (veh/h)		848				1004					431			175		256
v/c Ratio		0.01				0.02					0.05			0.53		0.06
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.2			2.7		0.2
Control Delay (s/veh)		9.3				8.6					13.8			46.5		19.9
Level of Service (LOS)		A				A					B			E		C
Approach Delay (s/veh)	0.1				0.2				13.8				42.7			
Approach LOS	A				A				B				E			

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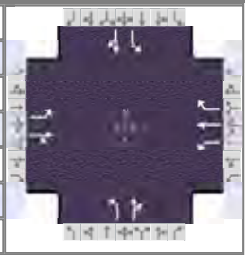
HCS Signalized Intersection Results Summary

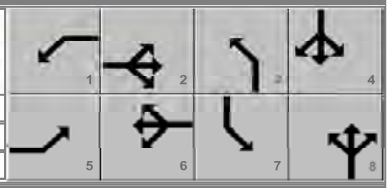
General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & Mickelson Roa…	File Name	(10) SD38&Mickelson_AM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	135	445	35	40	195	190	45	55	65	215	20	195

Signal Information			
Cycle, s	70.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	2.9	2.1	33.1	3.1	2.9	10.0	
Yellow	4.0	0.0	4.0	4.0	0.0	4.0	
Red	0.0	0.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	4.0	1.1	3.0	1.1	4.0	1.1	4.0
Phase Duration, s	8.9	39.1	6.9	37.1	7.1	14.0	10.0	16.9
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.3	3.1	3.3
Queue Clearance Time (g_s), s	5.0		2.9		3.7	7.3	8.0	12.3
Green Extension Time (g_e), s	0.2	0.0	0.0	0.0	0.0	0.6	0.0	0.6
Phase Call Probability	0.94		0.57		0.61	1.00	0.99	1.00
Max Out Probability	0.00		0.00		1.00	0.00	1.00	0.01

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	147	522		43	212	207	49	130		234	234	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1688	1749		1688	1772	1323	1688	1615		1688	1523	
Queue Service Time (g_s), s	3.0	14.8		0.9	5.0	6.8	1.7	5.3		6.0	10.3	
Cycle Queue Clearance Time (g_c), s	3.0	14.8		0.9	5.0	6.8	1.7	5.3		6.0	10.3	
Green Ratio (*g/C*)	0.54	0.50		0.51	0.47	0.47	0.19	0.14		0.24	0.18	
Capacity (*c*), veh/h	690	878		402	837	625	187	231		333	282	
Volume-to-Capacity Ratio (*X*)	0.213	0.594		0.108	0.253	0.330	0.262	0.565		0.702	0.830	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	1.7	9.5		0.5	3.4	3.6	1.2	3.5		2.5	6.7	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00		0.00	0.00	0.00	0.00	0.00		0.00	0.00	
Uniform Delay (d_1), s/veh	8.2	12.4		10.1	11.1	11.5	24.5	28.0		25.5	27.5	
Incremental Delay (d_2), s/veh	0.1	3.0		0.0	0.7	1.4	0.3	0.8		5.5	2.4	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	8.2	15.3		10.2	11.8	13.0	24.8	28.8		31.1	29.9	
Level of Service (LOS)	A	B		B	B	B	C	C		C	C	
Approach Delay, s/veh / LOS	13.8	B		12.2	B		27.7	C		30.5	C	
Intersection Delay, s/veh / LOS	19.2						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.88	B	1.89	B	2.12	B	1.92	B
Bicycle LOS Score / LOS	1.59	B	1.25	A	0.78	A	1.26	A

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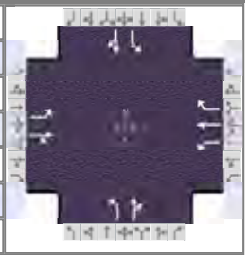
HCS Signalized Intersection Results Summary

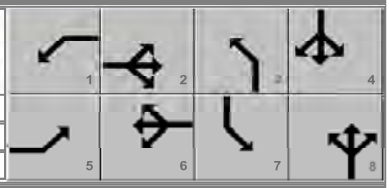
General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & Mickelson Roa…	File Name	(10) SD38&Mickelson_PM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	160	220	20	135	535	225	20	65	10	215	15	185

Signal Information			
Cycle, s	70.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	5.0	0.7	30.8	1.7	1.3	7.0	
Yellow	3.5	0.0	4.0	3.5	3.5	4.0	
Red	1.0	0.0	1.0	1.0	1.0	1.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	4.0	1.1	3.0	1.1	4.0	1.1	4.0
Phase Duration, s	10.2	36.5	9.5	35.8	6.2	12.0	12.0	17.8
Change Period, ($Y+R_c$), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.3	3.1	3.3
Queue Clearance Time (g_s), s	5.8		5.3		2.8	5.1	9.5	11.6
Green Extension Time (g_e), s	0.1	0.0	0.1	0.0	0.0	0.3	0.0	0.2
Phase Call Probability	0.97		0.94		0.34	1.00	0.99	1.00
Max Out Probability	1.00		1.00		1.00	0.63	1.00	1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	174	261		147	582	245	22	82		234	217	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1688	1746		1688	1772	1323	1688	1730		1688	1519	
Queue Service Time (g_s), s	3.8	6.8		3.3	19.2	8.9	0.8	3.1		7.5	9.6	
Cycle Queue Clearance Time (g_c), s	3.8	6.8		3.3	19.2	8.9	0.8	3.1		7.5	9.6	
Green Ratio (*g/C*)	0.52	0.45		0.51	0.44	0.44	0.12	0.10		0.24	0.18	
Capacity (*c*), veh/h	379	786		587	779	582	164	173		356	277	
Volume-to-Capacity Ratio (*X*)	0.459	0.332		0.250	0.746	0.420	0.132	0.472		0.656	0.785	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	2.2	4.6		1.9	12.8	4.8	0.6	2.3		6.3	7.1	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00		0.00	0.00	0.00	0.00	0.00		0.00	0.00	
Uniform Delay (d_1), s/veh	12.2	12.4		9.7	16.3	13.5	27.4	29.8		24.6	27.3	
Incremental Delay (d_2), s/veh	0.3	1.1		0.1	6.4	2.2	0.1	0.7		3.4	8.9	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	12.6	13.6		9.8	22.8	15.7	27.6	30.5		28.0	36.2	
Level of Service (LOS)	B	B		A	C	B	C	C		C	D	
Approach Delay, s/veh / LOS	13.2	B		19.0	B		29.9	C		32.0	C	
Intersection Delay, s/veh / LOS	21.3						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.89	B	1.89	B	2.12	B	1.92	B
Bicycle LOS Score / LOS	1.20	A	2.09	B	0.66	A	1.23	A

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HCS Two-Way Stop-Control Report

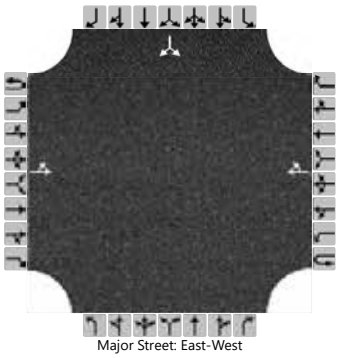
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD38 & 466th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	466th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		2	765				430	5						4		0
Percent Heavy Vehicles (%)		0												50		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.90		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.95		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2													4	
Capacity, c (veh/h)		1100													140	
v/c Ratio		0.00													0.03	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		8.3	0.0												31.6	
Level of Service (LOS)		A	A												D	
Approach Delay (s/veh)		0.1												31.6		
Approach LOS		A												D		

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HCS Two-Way Stop-Control Report

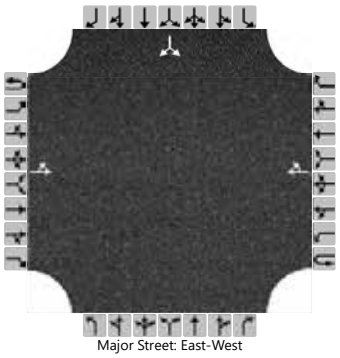
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD38 & 466th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	466th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		0	445				910	2						5		2
Percent Heavy Vehicles (%)		0												33		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.73		6.20
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.80		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													8	
Capacity, c (veh/h)		705													144	
v/c Ratio		0.00													0.05	
95% Queue Length, Q_{95} (veh)		0.0													0.2	
Control Delay (s/veh)		10.1	0.0												31.4	
Level of Service (LOS)		B	A												D	
Approach Delay (s/veh)		0.0												31.4		
Approach LOS		A												D		

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HCS Two-Way Stop-Control Report

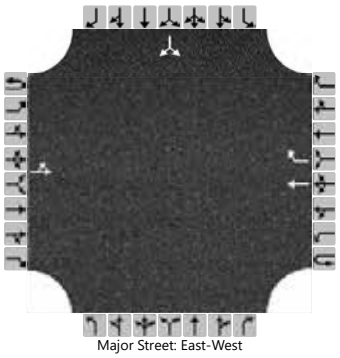
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 WB Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 WB Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		LT					T	R							LR	
Volume (veh/h)		40	730				255	20						15		190
Percent Heavy Vehicles (%)		0												56		12
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage							Undivided									

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.96		6.32
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												4.00		3.41

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		43													223	
Capacity, c (veh/h)		1274													584	
v/c Ratio		0.03													0.38	
95% Queue Length, Q_{95} (veh)		0.1													1.8	
Control Delay (s/veh)		7.9	0.5												14.9	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)		0.9												14.9		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

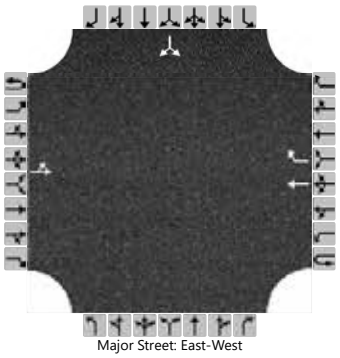
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 WB Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 WB Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		LT					T	R							LR	
Volume (veh/h)		25	420				415	35						30		495
Percent Heavy Vehicles (%)		0												6		2
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage							Undivided									

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.10												6.46		6.22
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.55		3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		27													571	
Capacity, c (veh/h)		1085													568	
v/c Ratio		0.03													1.01	
95% Queue Length, Q_{95} (veh)		0.1													14.8	
Control Delay (s/veh)		8.4	0.3												66.1	
Level of Service (LOS)		A	A												F	
Approach Delay (s/veh)		0.7												66.1		
Approach LOS		A												F		

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HCS Two-Way Stop-Control Report

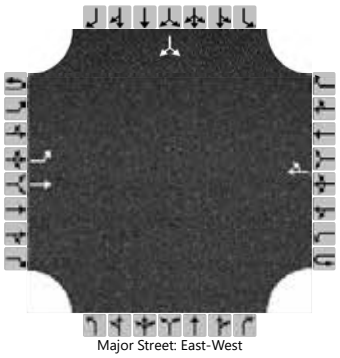
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 EB Ramp Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 EB Ramp Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	T					TR							LR	
Volume (veh/h)		430	315				245	20						5		30
Percent Heavy Vehicles (%)		1												33		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.11												6.73		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.21												3.80		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		467													38	
Capacity, c (veh/h)		1280													307	
v/c Ratio		0.37													0.12	
95% Queue Length, Q_{95} (veh)		1.7													0.4	
Control Delay (s/veh)		9.4													18.4	
Level of Service (LOS)		A													C	
Approach Delay (s/veh)		5.4												18.4		
Approach LOS		A												C		

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HCS Two-Way Stop-Control Report

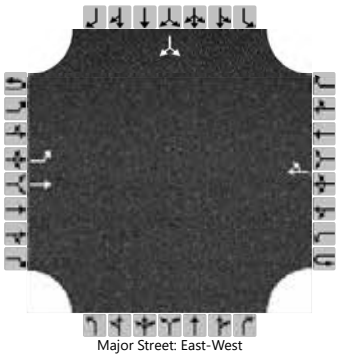
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 EB Ramp Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 EB Ramp Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		L	T					TR							LR	
Volume (veh/h)		190	265				420	30						40		35
Percent Heavy Vehicles (%)		12												36		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.22												6.76		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.31												3.82		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		207													82	
Capacity, c (veh/h)		1024													224	
v/c Ratio		0.20													0.36	
95% Queue Length, Q_{95} (veh)		0.8													1.6	
Control Delay (s/veh)		9.4													30.0	
Level of Service (LOS)		A													D	
Approach Delay (s/veh)	3.9												30.0			
Approach LOS	A												D			

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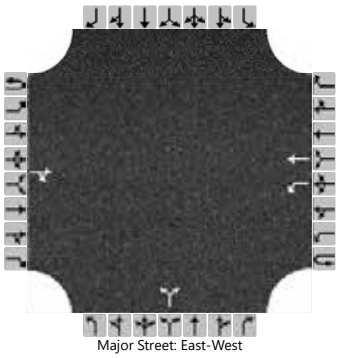
HCS Two-Way Stop-Control Report

General Information		Site Information	
Analyst	NM	Intersection	SD 38 & 466th Ave (South)
Agency/Co.	HRG	Jurisdiction	SDDOT
Date Performed	5/8/2023	East/West Street	SD 38
Analysis Year	2050	North/South Street	466th Ave (South)
Time Analyzed	AM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	SD 38		

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			305	20		20	240			25		20				
Percent Heavy Vehicles (%)						20				33		60				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.30				6.73		6.80				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.38				3.80		3.84				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						22					49					
Capacity, c (veh/h)						1112					453					
v/c Ratio						0.02					0.11					
95% Queue Length, Q_{95} (veh)						0.1					0.4					
Control Delay (s/veh)						8.3					13.9					
Level of Service (LOS)						A					B					
Approach Delay (s/veh)						0.6				13.9						
Approach LOS						A				B						

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HCS Two-Way Stop-Control Report

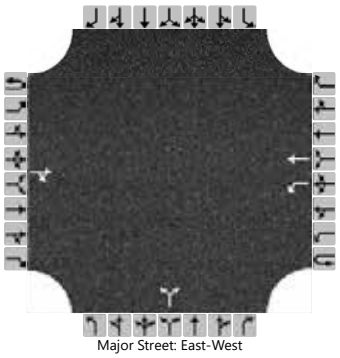
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 466th Ave (South)
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	466th Ave (South)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	1	0		0	0	0
Configuration				TR		L	T				LR					
Volume (veh/h)			280	20		15	405			45		25				
Percent Heavy Vehicles (%)						11				20		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized																
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.21				6.60		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.30				3.68		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						16					76					
Capacity, c (veh/h)						1185					412					
v/c Ratio						0.01					0.18					
95% Queue Length, Q_{95} (veh)						0.0					0.7					
Control Delay (s/veh)						8.1					15.7					
Level of Service (LOS)						A					C					
Approach Delay (s/veh)						0.3				15.7						
Approach LOS						A				C						

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HCS Two-Way Stop-Control Report

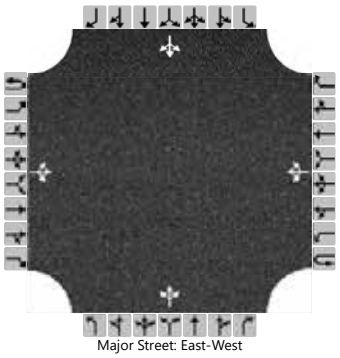
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 468th Avenue
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	468th Ave / County Highway 141
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		4	360	0		0	225	50		2	2	0		50	0	7
Percent Heavy Vehicles (%)		0				0				0	100	0		4	0	50
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	7.50	6.20		7.14	6.50	6.70
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.90	3.30		3.54	4.00	3.75

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		4				0					4				62	
Capacity, c (veh/h)		1274				1178					313				383	
v/c Ratio		0.00				0.00					0.01				0.16	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.6	
Control Delay (s/veh)		7.8	0.0	0.0		8.1	0.0	0.0			16.7				16.2	
Level of Service (LOS)		A	A	A		A	A	A			C				C	
Approach Delay (s/veh)	0.1				0.0				16.7				16.2			
Approach LOS	A				A				C				C			

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HCS Two-Way Stop-Control Report

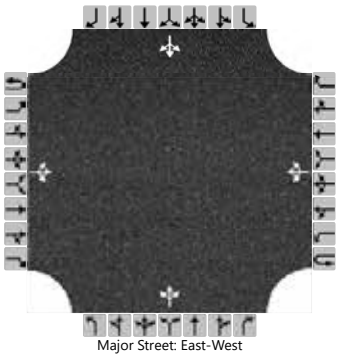
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 468th Avenue
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	468th Ave / County Highway 141
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	310	2		5	420	55		2	2	0		50	4	4
Percent Heavy Vehicles (%)		0				0				0	0	0		4	100	50
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.20		7.14	7.50	6.70
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.30		3.54	4.90	3.75

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				5					4				63	
Capacity, c (veh/h)		1060				1231					292				283	
v/c Ratio		0.00				0.00					0.01				0.22	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.8	
Control Delay (s/veh)		8.4	0.0	0.0		7.9	0.0	0.0			17.5				21.3	
Level of Service (LOS)		A	A	A		A	A	A			C				C	
Approach Delay (s/veh)	0.0				0.1				17.5				21.3			
Approach LOS	A				A				C				C			

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HCS Two-Way Stop-Control Report

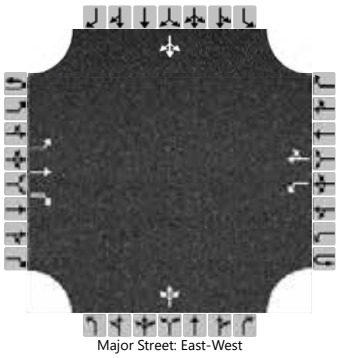
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 469th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	469th Ave / Co Hwy 139
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	1	0	1	1	0		0	1	0		0	1	0
Configuration		L	T	R		L		TR			LTR				LTR	
Volume (veh/h)		5	330	75		75	165	5		110	5	280		15	5	5
Percent Heavy Vehicles (%)		3				5				13	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No														
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.15				7.23	6.53	6.23		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.25				3.62	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		5				82					429				27	
Capacity, c (veh/h)		1384				1104					498				228	
v/c Ratio		0.00				0.07					0.86				0.12	
95% Queue Length, Q_{95} (veh)		0.0				0.2					9.1				0.4	
Control Delay (s/veh)		7.6				8.5					42.5				22.9	
Level of Service (LOS)		A				A					E				C	
Approach Delay (s/veh)		0.1				2.6				42.5				22.9		
Approach LOS		A				A				E				C		

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HCS Two-Way Stop-Control Report

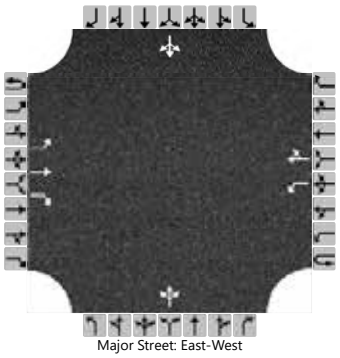
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 469th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	469th Ave / Co Hwy 139
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	1	0	1	1	0		0	1	0		0	1	0
Configuration		L	T	R		L		TR			LTR				LTR	
Volume (veh/h)		5	245	120		285	380	5		100	5	120		20	5	10
Percent Heavy Vehicles (%)		3				5				2	3	15		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No														
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.15				7.12	6.53	6.35		7.13	6.53	6.23
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.25				3.52	4.03	3.44		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		5				310					245				38	
Capacity, c (veh/h)		1135				1146					175				107	
v/c Ratio		0.00				0.27					1.40				0.35	
95% Queue Length, Q_{95} (veh)		0.0				1.1					14.9				1.4	
Control Delay (s/veh)		8.2				9.3					259.5				55.9	
Level of Service (LOS)		A				A					F				F	
Approach Delay (s/veh)		0.1				4.0				259.5				55.9		
Approach LOS		A				A				F				F		

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HCS Two-Way Stop-Control Report

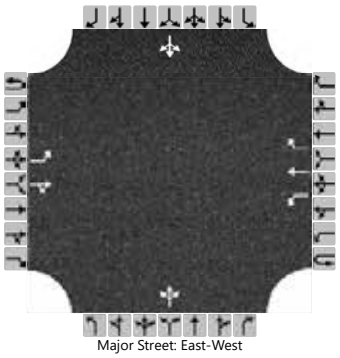
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & La Mesa
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	La Mesa
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		0	1	0		0	1	0
Configuration		L		TR		L	T	R			LTR				LTR	
Volume (veh/h)		30	700	4		0	235	15		0	15	5		75	4	30
Percent Heavy Vehicles (%)		0				0				0	13	0		0	50	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized						No										
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.63	6.20		7.10	7.00	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.12	3.30		3.50	4.45	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		33				0					22				118	
Capacity, c (veh/h)		1303				857					227				219	
v/c Ratio		0.03				0.00					0.10				0.54	
95% Queue Length, Q_{95} (veh)		0.1				0.0					0.3				2.9	
Control Delay (s/veh)		7.8				9.2					22.5				39.2	
Level of Service (LOS)		A				A					C				E	
Approach Delay (s/veh)	0.3				0.0				22.5				39.2			
Approach LOS	A				A				C				E			

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HCS Two-Way Stop-Control Report

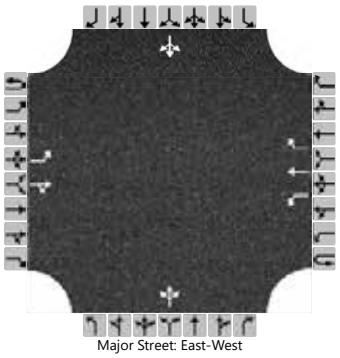
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & La Mesa
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	La Mesa
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		0	1	0		0	1	0
Configuration		L		TR		L	T	R			LTR				LTR	
Volume (veh/h)		25	325	0		9	735	100		4	5	0		80	15	30
Percent Heavy Vehicles (%)		0				0				0	0	0		9	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized						No										
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.20		7.19	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.30		3.58	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		27				10					10				136	
Capacity, c (veh/h)		758				1217					136				168	
v/c Ratio		0.04				0.01					0.07				0.81	
95% Queue Length, Q_{95} (veh)		0.1				0.0					0.2				5.4	
Control Delay (s/veh)		9.9				8.0					33.5				81.5	
Level of Service (LOS)		A				A					D				F	
Approach Delay (s/veh)	0.7				0.1				33.5				81.5			
Approach LOS	A				A				D				F			

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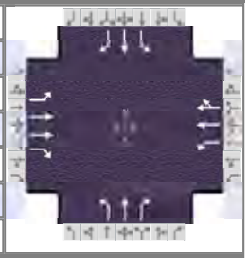
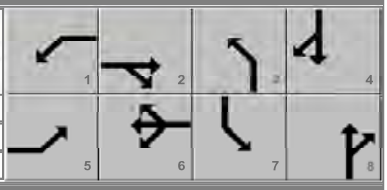
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & Marion Street	File Name	(18) SD38&Marion_AM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	165	340	105	50	125	75	110	225	120	45	145	40

Signal Information										
Cycle, s	50.0	Reference Phase	2							
Offset, s	0	Reference Point	End							
Uncoordinated	No	Simult. Gap E/W	On							
Force Mode	Fixed	Simult. Gap N/S	On							
				Green	2.6	3.9	12.9	2.5	2.0	10.0
				Yellow	4.0	0.0	4.0	4.0	0.0	4.0
				Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	1.1	4.0	2.0	3.0	2.0	3.0
Phase Duration, s	10.6	20.8	6.6	16.9	8.5	16.0	6.5	14.0
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	2.9	0.0	2.9	0.0	2.9	2.9	2.9	2.9
Queue Clearance Time (g_s), s	7.1		3.1		5.6	8.5	3.5	5.9
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.6
Phase Call Probability	0.92		0.53		0.81	1.00	0.49	1.00
Max Out Probability	1.00		0.04		1.00	0.21	1.00	0.15

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	179	370	114	54	112	106	120	245	130	49	158	43
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1701	1674	1525	1714	1772	1556	1647	1674	1502	1554	1758	1466
Queue Service Time (g_s), s	5.1	4.1	2.7	1.1	2.5	2.7	3.6	6.5	3.6	1.5	3.9	1.2
Cycle Queue Clearance Time (g_c), s	5.1	4.1	2.7	1.1	2.5	2.7	3.6	6.5	3.6	1.5	3.9	1.2
Green Ratio (*g/C*)	0.13	0.34	0.34	0.31	0.26	0.26	0.09	0.24	0.24	0.05	0.20	0.20
Capacity (*c*), veh/h	223	1128	514	456	459	403	148	403	361	77	352	293
Volume-to-Capacity Ratio (*X*)	0.804	0.328	0.222	0.119	0.243	0.263	0.806	0.607	0.361	0.638	0.448	0.148
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	4.1	2.2	1.4	0.6	1.6	1.6	3.2	3.5	1.7	1.0	2.3	0.6
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	21.1	12.4	11.9	12.3	14.7	14.7	22.3	16.9	15.8	23.3	17.6	16.5
Incremental Delay (d_2), s/veh	11.0	0.8	1.0	0.0	1.3	1.6	15.9	0.8	0.2	3.3	0.3	0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	32.1	13.1	12.9	12.3	15.9	16.3	38.2	17.7	16.0	26.6	17.9	16.6
Level of Service (LOS)	C	B	B	B	B	B	D	B	B	C	B	B
Approach Delay, s/veh / LOS	18.2	B		15.4	B		22.2	C		19.4	B	
Intersection Delay, s/veh / LOS	19.1						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.08	B	2.09	B	2.26	B	2.42	B
Bicycle LOS Score / LOS	1.03	A	0.71	A	1.30	A	0.90	A

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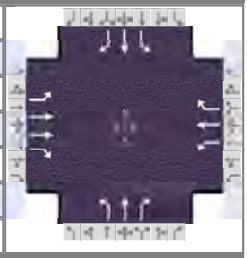
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	PM Peak	PHF	0.90
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 16:45
Intersection	SD 38 & Marion Street	File Name	(18) SD38&Marion_PM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	70	230	105	170	355	55	180	205	125	85	355	205

Signal Information												
Cycle, s	60.0	Reference Phase	2									
Offset, s	0	Reference Point	End	Green	3.7	0.4	13.3	4.2	2.8	15.5		
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	4.0	4.0	4.0	0.0	4.0		
Force Mode	Fixed	Simult. Gap N/S	On	Red	0.0	0.0	0.0	0.0	0.0	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	7.7	17.3	12.2	21.7	11.0	22.3	8.2	19.5
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	2.9	0.0	2.9	0.0	2.9	3.0	2.9	3.0
Queue Clearance Time (g_s), s	5.1		8.5		9.0	8.1	5.3	14.7
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.8
Phase Call Probability	0.73		0.96		0.96	1.00	0.79	1.00
Max Out Probability	0.55		1.00		1.00	0.03	1.00	0.89

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	78	256	117	189	394	61	200	228	139	94	394	228
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1474	1660	1490	1688	1772	1406	1714	1772	1478	1688	1772	1478
Queue Service Time (g_s), s	3.1	3.9	4.0	6.5	12.1	1.9	7.0	6.1	4.3	3.3	12.7	8.1
Cycle Queue Clearance Time (g_c), s	3.1	3.9	4.0	6.5	12.1	1.9	7.0	6.1	4.3	3.3	12.7	8.1
Green Ratio (*g/C*)	0.06	0.22	0.22	0.14	0.30	0.30	0.12	0.31	0.31	0.07	0.26	0.26
Capacity (*c*), veh/h	92	735	330	230	523	415	200	541	451	119	459	383
Volume-to-Capacity Ratio (*X*)	0.845	0.347	0.354	0.822	0.754	0.147	1.000	0.421	0.308	0.797	0.859	0.595
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	2.1	2.5	2.5	6.1	9.1	1.0	10.0	3.6	2.1	2.7	9.5	4.2
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	27.8	19.7	19.7	25.2	19.2	15.6	26.5	16.6	16.0	27.5	21.2	19.5
Incremental Delay (d_2), s/veh	7.7	1.3	3.0	18.3	9.7	0.7	63.6	0.2	0.1	10.2	10.8	0.7
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	35.6	21.0	22.7	43.5	28.9	16.3	90.1	16.8	16.1	37.7	31.9	20.2
Level of Service (LOS)	D	C	C	D	C	B	F	B	B	D	C	C
Approach Delay, s/veh / LOS	23.9	C		32.0	C		42.5	D		29.0	C	
Intersection Delay, s/veh / LOS	32.1						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.10	B	2.10	B	2.26	B	2.27	B
Bicycle LOS Score / LOS	0.86	A	1.55	B	1.42	A	1.67	B

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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2050 NB
Jurisdiction	SDDOT	Time Analyzed	AM PEAK
Project Description	EB SD38 Corridor Study	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1084
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	585	Opposing Demand Flow Rate, veh/h	350
Peak Hour Factor	0.88	Total Trucks, %	2.16
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.34

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.36618	Speed Power Coefficient (p)	0.50547
PF Slope Coefficient (m)	-1.35882	PF Power Coefficient (p)	0.76024
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	6.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1084	-	-	52.0

Vehicle Results

Average Speed, mi/h	52.0	Percent Followers, %	59.5
Segment Travel Time, minutes	0.24	Follower Density (FD), followers/mi/ln	6.7
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	585	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.94	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	507
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	585	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.16
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.34

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.43973	PF Power Coefficient (p)	0.72475
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	507	-	-	51.6

Vehicle Results

Average Speed, mi/h	51.6	Percent Followers, %	62.3
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	7.1
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	585	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.94	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	535
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	585	Opposing Demand Flow Rate, veh/h	350
Peak Hour Factor	0.88	Total Trucks, %	2.16
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.34

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.36618	Speed Power Coefficient (p)	0.50547
PF Slope Coefficient (m)	-1.35882	PF Power Coefficient (p)	0.76024
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	6.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	535	-	-	52.0

Vehicle Results

Average Speed, mi/h	52.0	Percent Followers, %	59.5
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	6.7
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	585	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.94	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 4

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1494
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	816	Opposing Demand Flow Rate, veh/h	434
Peak Hour Factor	0.88	Total Trucks, %	1.63
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39151	Speed Power Coefficient (p)	0.49146
PF Slope Coefficient (m)	-1.26499	PF Power Coefficient (p)	0.79656
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	8.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1494	-	-	66.3

Vehicle Results

Average Speed, mi/h	66.3	Percent Followers, %	65.9
Segment Travel Time, minutes	0.26	Follower Density (FD), followers/mi/ln	8.1
Vehicle LOS	D		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	816	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.11	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 5

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5762
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	816	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	1.63
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.62977	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.20069	PF Power Coefficient (p)	0.78591
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5762	-	-	66.0

Vehicle Results

Average Speed, mi/h	66.0	Percent Followers, %	64.1
Segment Travel Time, minutes	0.99	Follower Density (FD), followers/mi/ln	7.9
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	816	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.11	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	383
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	816	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	1.89
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29361	PF Power Coefficient (p)	0.75772
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	8.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	383	-	-	66.0

Vehicle Results

Average Speed, mi/h	66.0	Percent Followers, %	67.0
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	8.3
Vehicle LOS	D		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	816	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1485
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	883	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.52

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57684	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28453	PF Power Coefficient (p)	0.76145
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	9.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1485	-	-	65.9

Vehicle Results

Average Speed, mi/h	65.9	Percent Followers, %	68.9
Segment Travel Time, minutes	0.26	Follower Density (FD), followers/mi/ln	9.2
Vehicle LOS	D		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	883	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.56	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 8

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	426
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	430	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	6.47
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.25

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29307	PF Power Coefficient (p)	0.75839
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	426	-	-	67.1

Vehicle Results			
Average Speed, mi/h	67.1	Percent Followers, %	49.4
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	3.2
Vehicle LOS	B		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	430	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 9

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1212
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	360	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.21

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29321	PF Power Coefficient (p)	0.75821
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1212	-	-	67.4

Vehicle Results

Average Speed, mi/h	67.4	Percent Followers, %	44.9
Segment Travel Time, minutes	0.20	Follower Density (FD), followers/mi/ln	2.4
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	360	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.73	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1877
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	360	Opposing Demand Flow Rate, veh/h	263
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.21

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35010	Speed Power Coefficient (p)	0.52339
PF Slope Coefficient (m)	-1.22503	PF Power Coefficient (p)	0.81368
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1877	-	-	67.8

Vehicle Results

Average Speed, mi/h	67.8	Percent Followers, %	41.4
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	2.2
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	360	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.73	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1872
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	360	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.21

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58354	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26676	PF Power Coefficient (p)	0.76864
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1872	-	-	67.4

Vehicle Results

Average Speed, mi/h	67.4	Percent Followers, %	43.9
Segment Travel Time, minutes	0.32	Follower Density (FD), followers/mi/ln	2.3
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	360	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.73	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 12

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	3603
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	360	Opposing Demand Flow Rate, veh/h	263
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.21

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.37375	Speed Power Coefficient (p)	0.52339
PF Slope Coefficient (m)	-1.18124	PF Power Coefficient (p)	0.83047
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3603	-	-	67.8

Vehicle Results			
Average Speed, mi/h	67.8	Percent Followers, %	39.7
Segment Travel Time, minutes	0.60	Follower Density (FD), followers/mi/ln	2.1
Vehicle LOS	B		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	360	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.73	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 13

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1053
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	360	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.21

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29321	PF Power Coefficient (p)	0.75821

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1053	-	-	67.4

Vehicle Results

Average Speed, mi/h	67.4	Percent Followers, %	44.9
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	2.4
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	360	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.73	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 14

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1120
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	360	Opposing Demand Flow Rate, veh/h	263
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.21

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34020	Speed Power Coefficient (p)	0.52339
PF Slope Coefficient (m)	-1.25077	PF Power Coefficient (p)	0.80264
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1120	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	42.4
Segment Travel Time, minutes	0.19	Follower Density (FD), followers/mi/ln	2.2
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	360	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.73	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 15

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1272
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	456	Opposing Demand Flow Rate, veh/h	306
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.27

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35349	Speed Power Coefficient (p)	0.51403
PF Slope Coefficient (m)	-1.25787	PF Power Coefficient (p)	0.80000
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1272	-	-	67.4

Vehicle Results

Average Speed, mi/h	67.4	Percent Followers, %	48.9
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	3.3
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	456	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.79	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 16

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	625
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	456	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.27

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29323	PF Power Coefficient (p)	0.75819
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	625	-	-	67.0

Vehicle Results

Average Speed, mi/h	67.0	Percent Followers, %	51.0
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	3.5
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	456	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.79	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 17

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1995
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	456	Opposing Demand Flow Rate, veh/h	306
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.27

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36529	Speed Power Coefficient (p)	0.51403
PF Slope Coefficient (m)	-1.22751	PF Power Coefficient (p)	0.81278
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1995	-	-	67.4

Vehicle Results

Average Speed, mi/h	67.4	Percent Followers, %	47.7

Segment Travel Time, minutes	0.34	Follower Density (FD), followers/mi/ln	3.2
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	456	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.79	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 18

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1399
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	456	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.27

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57524	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28884	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1399	-	-	67.0

Vehicle Results

Average Speed, mi/h	67.0	Percent Followers, %	50.8
Segment Travel Time, minutes	0.24	Follower Density (FD), followers/mi/ln	3.5
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	456	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.79	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 19

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1254
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	811	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	1.51
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29366	PF Power Coefficient (p)	0.75766
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	8.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1254	-	-	66.0

Vehicle Results			
Average Speed, mi/h	66.0	Percent Followers, %	66.9
Segment Travel Time, minutes	0.22	Follower Density (FD), followers/mi/ln	8.2
Vehicle LOS	D		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	811	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.07	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 20

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	1108
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	811	Opposing Demand Flow Rate, veh/h	280
Peak Hour Factor	0.88	Total Trucks, %	1.51
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34556	Speed Power Coefficient (p)	0.51956
PF Slope Coefficient (m)	-1.25412	PF Power Coefficient (p)	0.80102
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	8.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1108	-	-	66.4

Vehicle Results

Average Speed, mi/h	66.4	Percent Followers, %	65.4
Segment Travel Time, minutes	0.19	Follower Density (FD), followers/mi/ln	8.0
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	811	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.07	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 21

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2901
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	811	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	1.51
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.48

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.59854	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.23554	PF Power Coefficient (p)	0.77974
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	8.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2901	-	-	66.0

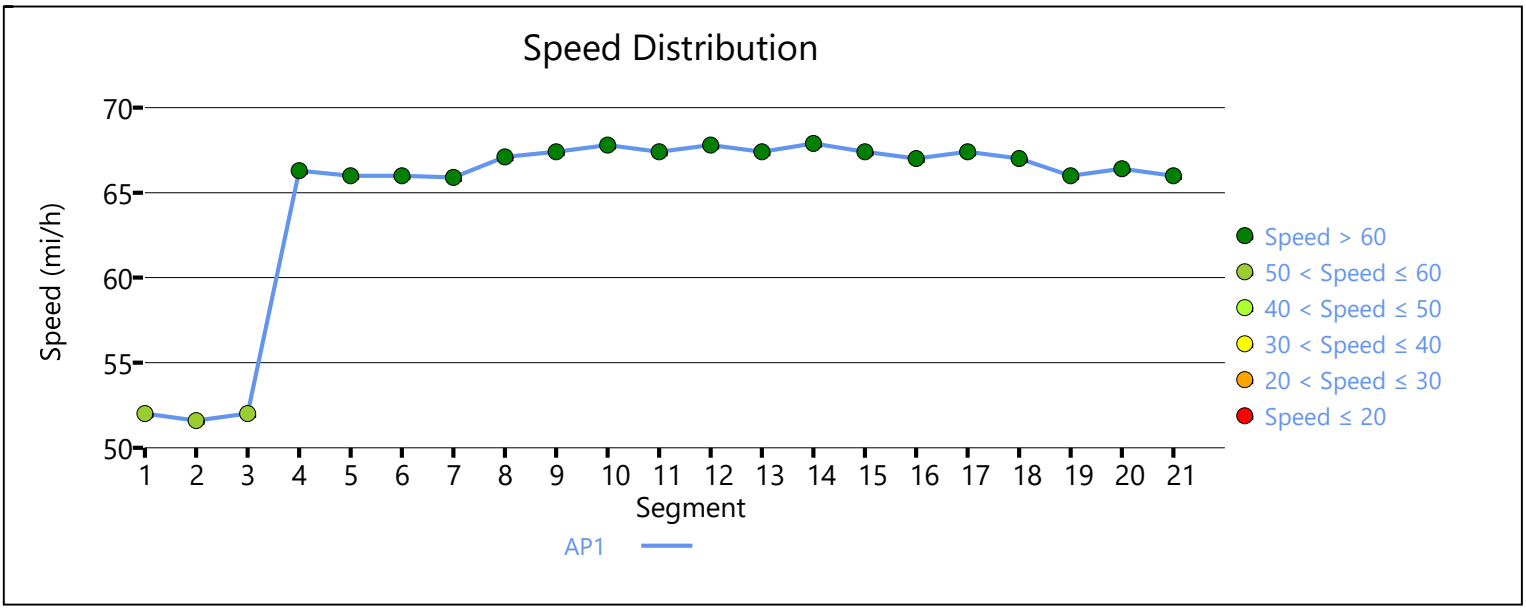
Vehicle Results

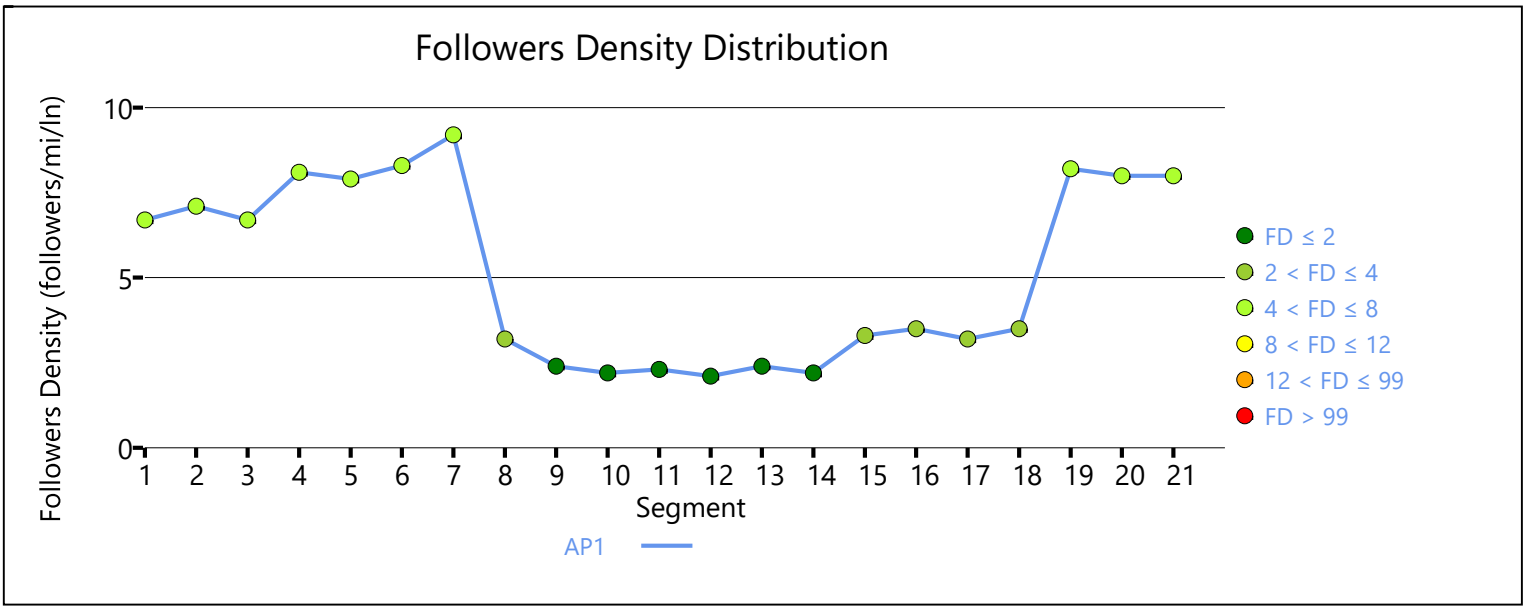
Average Speed, mi/h	66.0	Percent Followers, %	65.0
Segment Travel Time, minutes	0.50	Follower Density (FD), followers/mi/ln	8.0
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	811	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.07	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Facility Results				
T	**VMT veh-mi/p**	**VHD veh-h/p**	**Follower Density, followers/ mi/ln**	**LOS**
1	813	0.62	5.3	C





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2050 NB
Jurisdiction	SDDOT	Time Analyzed	PM PEAK
Project Description	EB SD38 Corridor Study	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1084
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	368	Opposing Demand Flow Rate, veh/h	674
Peak Hour Factor	0.88	Total Trucks, %	2.16
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.22

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.44134	Speed Power Coefficient (p)	0.46217
PF Slope Coefficient (m)	-1.40189	PF Power Coefficient (p)	0.74782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1084	-	-	52.6

Vehicle Results

Average Speed, mi/h	52.6	Percent Followers, %	48.5
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	3.4
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	368	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.70	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1014
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	368	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.16
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.22

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.43973	PF Power Coefficient (p)	0.72475
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	507	-	-	52.4
2	Horizontal Curve	507	3000	0.0	52.4

Vehicle Results			
Average Speed, mi/h	52.4	Percent Followers, %	50.2
Segment Travel Time, minutes	0.22	Follower Density (FD), followers/mi/ln	3.5
Vehicle LOS	B		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	368	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.70	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 3

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	535
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	368	Opposing Demand Flow Rate, veh/h	674
Peak Hour Factor	0.88	Total Trucks, %	2.16
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.22

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.44134	Speed Power Coefficient (p)	0.46217
PF Slope Coefficient (m)	-1.40189	PF Power Coefficient (p)	0.74782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	535	-	-	52.6

Vehicle Results

Average Speed, mi/h	52.6	Percent Followers, %	48.5
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	3.4
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	368	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.70	Bicycle Effective Speed Factor	4.62
Bicycle LOS	C		

Segment 4

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1494
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	445	Opposing Demand Flow Rate, veh/h	986
Peak Hour Factor	0.88	Total Trucks, %	1.63
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.26

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.50109	Speed Power Coefficient (p)	0.43798
PF Slope Coefficient (m)	-1.28998	PF Power Coefficient (p)	0.77572
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1494	-	-	67.2

Vehicle Results

Average Speed, mi/h	67.2	Percent Followers, %	49.8
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	3.3
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	445	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.80	Bicycle Effective Speed Factor	5.07

Bicycle LOS	C		

Segment 5

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	5762
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	445	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	1.63
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.26

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.62977	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.20069	PF Power Coefficient (p)	0.78591
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5762	-	-	67.0

Vehicle Results

Average Speed, mi/h	67.0	Percent Followers, %	47.1
Segment Travel Time, minutes	0.98	Follower Density (FD), followers/mi/ln	3.1
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	445	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	383
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	453	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	1.89
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.27

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29361	PF Power Coefficient (p)	0.75772
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	383	-	-	67.0

Vehicle Results

Average Speed, mi/h	67.0	Percent Followers, %	50.9
Segment Travel Time, minutes	0.06	Follower Density (FD), followers/mi/ln	3.4
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	453	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.87	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1485
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	522	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.31

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57684	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28453	PF Power Coefficient (p)	0.76145
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1485	-	-	66.8

Vehicle Results

Average Speed, mi/h	66.8	Percent Followers, %	54.3
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	4.2

Vehicle LOS	C		
Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	522	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.29	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 8

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	426
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0
Demand and Capacity			
Directional Demand Flow Rate, veh/h	407	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	6.47
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24
Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29307	PF Power Coefficient (p)	0.75839
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	426	-	-	67.2

Vehicle Results			
Average Speed, mi/h	67.2	Percent Followers, %	48.0
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	2.9
Vehicle LOS	B		
Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	407	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.20	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 9

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1212
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	314	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.18

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29321	PF Power Coefficient (p)	0.75821
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1212	-	-	67.6

Vehicle Results

Average Speed, mi/h	67.6	Percent Followers, %	41.5
Segment Travel Time, minutes	0.20	Follower Density (FD), followers/mi/ln	1.9
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	314	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.66	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1877
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	314	Opposing Demand Flow Rate, veh/h	430
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.18

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39699	Speed Power Coefficient (p)	0.49215
PF Slope Coefficient (m)	-1.24708	PF Power Coefficient (p)	0.80425
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1877	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	38.8
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	1.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	314	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.66	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1872
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	314	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.18

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58354	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26676	PF Power Coefficient (p)	0.76864
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1872	-	-	67.6

Vehicle Results

Average Speed, mi/h	67.6	Percent Followers, %	40.5
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	1.9
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	314	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.66	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 12

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3603
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	314	Opposing Demand Flow Rate, veh/h	430
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.18

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.42064	Speed Power Coefficient (p)	0.49215
PF Slope Coefficient (m)	-1.20239	PF Power Coefficient (p)	0.82051
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3603	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	37.1
Segment Travel Time, minutes	0.60	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	314	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.66	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 13

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1053
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	314	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.18

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29321	PF Power Coefficient (p)	0.75821
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1053	-	-	67.6

Vehicle Results

Average Speed, mi/h	67.6	Percent Followers, %	41.5
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	1.9
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	314	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.66	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 14

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1120
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	314	Opposing Demand Flow Rate, veh/h	430
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.18

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.38709	Speed Power Coefficient (p)	0.49215
PF Slope Coefficient (m)	-1.27337	PF Power Coefficient (p)	0.79352
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1120	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	39.8
Segment Travel Time, minutes	0.19	Follower Density (FD), followers/mi/ln	1.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	314	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.66	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 15

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1272
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	409	Opposing Demand Flow Rate, veh/h	536
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.41232	Speed Power Coefficient (p)	0.47739
PF Slope Coefficient (m)	-1.28274	PF Power Coefficient (p)	0.78869
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1272	-	-	67.5

Vehicle Results

Average Speed, mi/h	67.5	Percent Followers, %	46.9
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	2.8
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	409	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.74	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 16

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	625
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	409	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29323	PF Power Coefficient (p)	0.75819
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	625	-	-	67.2

Vehicle Results

Average Speed, mi/h	67.2	Percent Followers, %	48.1
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	2.9
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	409	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.74	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 17

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1995
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	409	Opposing Demand Flow Rate, veh/h	536
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.42412	Speed Power Coefficient (p)	0.47739
PF Slope Coefficient (m)	-1.25168	PF Power Coefficient (p)	0.80109
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1995	-	-	67.5

Vehicle Results

Average Speed, mi/h	67.5	Percent Followers, %	45.8
Segment Travel Time, minutes	0.34	Follower Density (FD), followers/mi/ln	2.8
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	409	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.74	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 18

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1399
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	409	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57524	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28884	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1399	-	-	67.2

Vehicle Results

Average Speed, mi/h	67.2	Percent Followers, %	48.0
Segment Travel Time, minutes	0.24	Follower Density (FD), followers/mi/ln	2.9
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	409	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.74	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 19

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1254
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	402	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	1.51
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29366	PF Power Coefficient (p)	0.75766
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1254	-	-	67.2

Vehicle Results			
Average Speed, mi/h	67.2	Percent Followers, %	47.7
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	2.9
Vehicle LOS	B		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	402	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 20

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	1108
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	402	Opposing Demand Flow Rate, veh/h	848
Peak Hour Factor	0.88	Total Trucks, %	1.51
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.47406	Speed Power Coefficient (p)	0.44728
PF Slope Coefficient (m)	-1.29735	PF Power Coefficient (p)	0.77650

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1108	-	-	67.4

Vehicle Results

Average Speed, mi/h	67.4	Percent Followers, %	47.3
Segment Travel Time, minutes	0.19	Follower Density (FD), followers/mi/ln	2.8
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	402	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 21

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	2901
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	402	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	1.51
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.59854	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.23554	PF Power Coefficient (p)	0.77974
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2901	-	-	67.2

Vehicle Results

Average Speed, mi/h	67.2	Percent Followers, %	45.5
Segment Travel Time, minutes	0.49	Follower Density (FD), followers/mi/ln	2.7
Vehicle LOS	B		

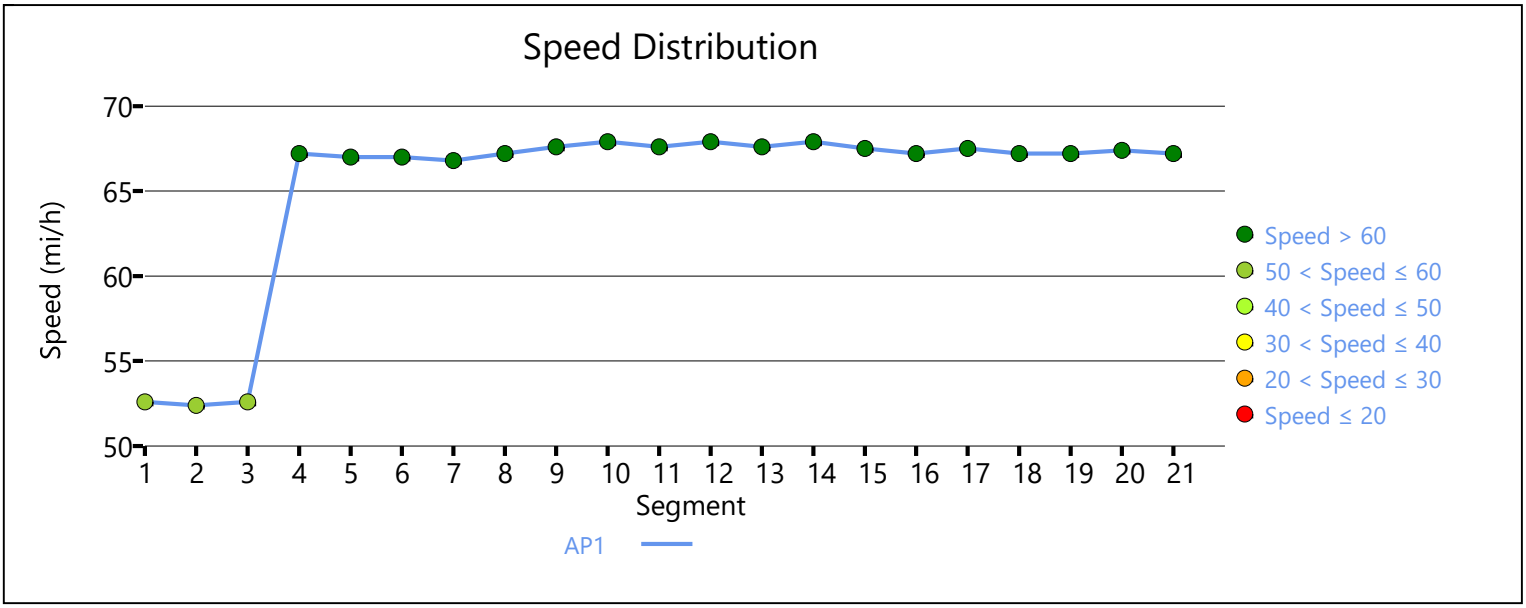
Bicycle Results

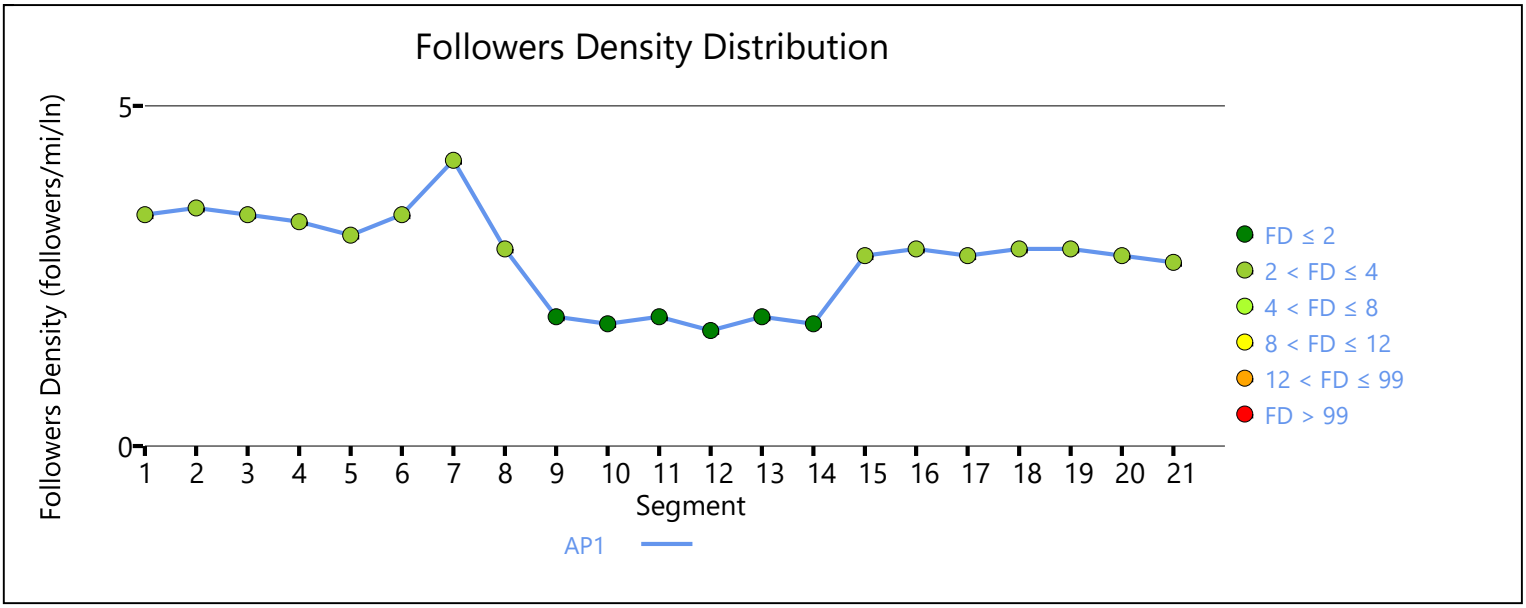
Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	402	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	541	0.32	2.7	B





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2050 NB
Jurisdiction	SDDOT	Time Analyzed	AM Peak
Project Description	SD 38 WB East of Hartford	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1727
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	280	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	8.97
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58112	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.27241	PF Power Coefficient (p)	0.76681
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1727	-	-	67.8

Vehicle Results

Average Speed, mi/h	67.8	Percent Followers, %	38.0
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	1.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	280	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.96	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1676
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	280	Opposing Demand Flow Rate, veh/h	811
Peak Hour Factor	0.88	Total Trucks, %	8.97
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.47404	Speed Power Coefficient (p)	0.45007
PF Slope Coefficient (m)	-1.27736	PF Power Coefficient (p)	0.78596
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1676	-	-	67.9

Vehicle Results			
Average Speed, mi/h	67.9	Percent Followers, %	37.4
Segment Travel Time, minutes	0.28	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	280	Bicycle Effective Width, ft	24
Bicycle LOS Score	4.96	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Segment 3

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1864
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	306	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.18

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58341	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26572	PF Power Coefficient (p)	0.77025
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1864	-	-	67.6

Vehicle Results

Average Speed, mi/h	67.6	Percent Followers, %	39.8
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	1.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	306	Bicycle Effective Width, ft	24
Bicycle LOS Score	8.99	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	718
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	306	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.18

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29182	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	718	-	-	67.6

Vehicle Results

Average Speed, mi/h	67.6	Percent Followers, %	40.8
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	1.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	306	Bicycle Effective Width, ft	24
Bicycle LOS Score	8.99	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1738
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	306	Opposing Demand Flow Rate, veh/h	456
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.18

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.40112	Speed Power Coefficient (p)	0.48825
PF Slope Coefficient (m)	-1.25400	PF Power Coefficient (p)	0.80244
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1738	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	38.4
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	306	Bicycle Effective Width, ft	24
Bicycle LOS Score	8.99	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	579
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	306	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.18

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29182	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	579	-	-	67.6

Vehicle Results

Average Speed, mi/h	67.6	Percent Followers, %	40.8
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	1.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	306	Bicycle Effective Width, ft	24
Bicycle LOS Score	8.99	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2262
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	263	Opposing Demand Flow Rate, veh/h	360
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.38489	Speed Power Coefficient (p)	0.50362
PF Slope Coefficient (m)	-1.22431	PF Power Coefficient (p)	0.81530
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2262	-	-	68.2

Vehicle Results

Average Speed, mi/h	68.2	Percent Followers, %	33.7
Segment Travel Time, minutes	0.38	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	262	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.75	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 8

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	980
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	263	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	980	-	-	67.9

Vehicle Results			
Average Speed, mi/h	67.9	Percent Followers, %	37.3
Segment Travel Time, minutes	0.16	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	262	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.75	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 9

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	3667
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	263	Opposing Demand Flow Rate, veh/h	360
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.40330	Speed Power Coefficient (p)	0.50362
PF Slope Coefficient (m)	-1.19252	PF Power Coefficient (p)	0.82659
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3667	-	-	68.2

Vehicle Results

Average Speed, mi/h	68.2	Percent Followers, %	32.6
Segment Travel Time, minutes	0.61	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	262	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.75	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 10

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1846
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	263	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58311	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26629	PF Power Coefficient (p)	0.77017
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1846	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	36.4
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	262	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.75	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2174
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	263	Opposing Demand Flow Rate, veh/h	360
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.38357	Speed Power Coefficient (p)	0.50362
PF Slope Coefficient (m)	-1.22716	PF Power Coefficient (p)	0.81417
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2174	-	-	68.2

Vehicle Results

Average Speed, mi/h	68.2	Percent Followers, %	33.8
Segment Travel Time, minutes	0.36	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	262	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.75	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 12

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1277
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	263	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1277	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	37.3
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	262	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.75	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 13

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	779
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	263	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.15

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	779	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	37.3
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	262	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.75	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	422
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	358	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	13.95
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.21

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29219	PF Power Coefficient (p)	0.75948
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	422	-	-	67.4

Vehicle Results

Average Speed, mi/h	67.4	Percent Followers, %	44.7
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	2.4
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	358	Bicycle Effective Width, ft	24
Bicycle LOS Score	7.38	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 15

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1478
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	310	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	19.53
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.18

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57671	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28298	PF Power Coefficient (p)	0.76370
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1478	-	-	67.6

Vehicle Results

Average Speed, mi/h	67.6	Percent Followers, %	40.8
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	1.9
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	310	Bicycle Effective Width, ft	24
Bicycle LOS Score	10.52	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 16

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	384
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	445	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.76
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.26

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29233	PF Power Coefficient (p)	0.75931
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	384	-	-	67.1

Vehicle Results

Average Speed, mi/h	67.1	Percent Followers, %	50.3
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	3.3
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	445	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.89	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 17

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3732
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	434	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.26

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.60878	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.21846	PF Power Coefficient (p)	0.78615
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3732	-	-	67.1

Vehicle Results

Average Speed, mi/h	67.1	Percent Followers, %	46.9

Segment Travel Time, minutes	0.63	Follower Density (FD), followers/mi/ln	3.0
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	434	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.61	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 18

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1360
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	434	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.26

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57450	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29014	PF Power Coefficient (p)	0.76012
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1360	-	-	67.1

Vehicle Results

Average Speed, mi/h	67.1	Percent Followers, %	49.5
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	3.2
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	434	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.61	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 19

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1595
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	434	Opposing Demand Flow Rate, veh/h	816
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.26

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.47345	Speed Power Coefficient (p)	0.44971
PF Slope Coefficient (m)	-1.28088	PF Power Coefficient (p)	0.78481
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1595	-	-	67.3

Vehicle Results

Average Speed, mi/h	67.3	Percent Followers, %	48.6
Segment Travel Time, minutes	0.27	Follower Density (FD), followers/mi/ln	3.1
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	434	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.61	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 20

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	595
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	434	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.26

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29239	PF Power Coefficient (p)	0.75923
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	595	-	-	67.1

Vehicle Results

Average Speed, mi/h	67.1	Percent Followers, %	49.6
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	3.2
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	434	Bicycle Effective Width, ft	24
Bicycle LOS Score	6.61	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 21

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	958
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	350	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	10.81
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.21

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.43859	PF Power Coefficient (p)	0.72596
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	958	-	-	52.4

Vehicle Results

Average Speed, mi/h	52.4	Percent Followers, %	48.9
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	3.3
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	350	Bicycle Effective Width, ft	24
Bicycle LOS Score	5.45	Bicycle Effective Speed Factor	4.62
Bicycle LOS	E		

Segment 22

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1659
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	350	Opposing Demand Flow Rate, veh/h	585
Peak Hour Factor	0.88	Total Trucks, %	10.81
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.21

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.42925	Speed Power Coefficient (p)	0.47156
PF Slope Coefficient (m)	-1.37257	PF Power Coefficient (p)	0.75811
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1659	-	-	52.7

Vehicle Results

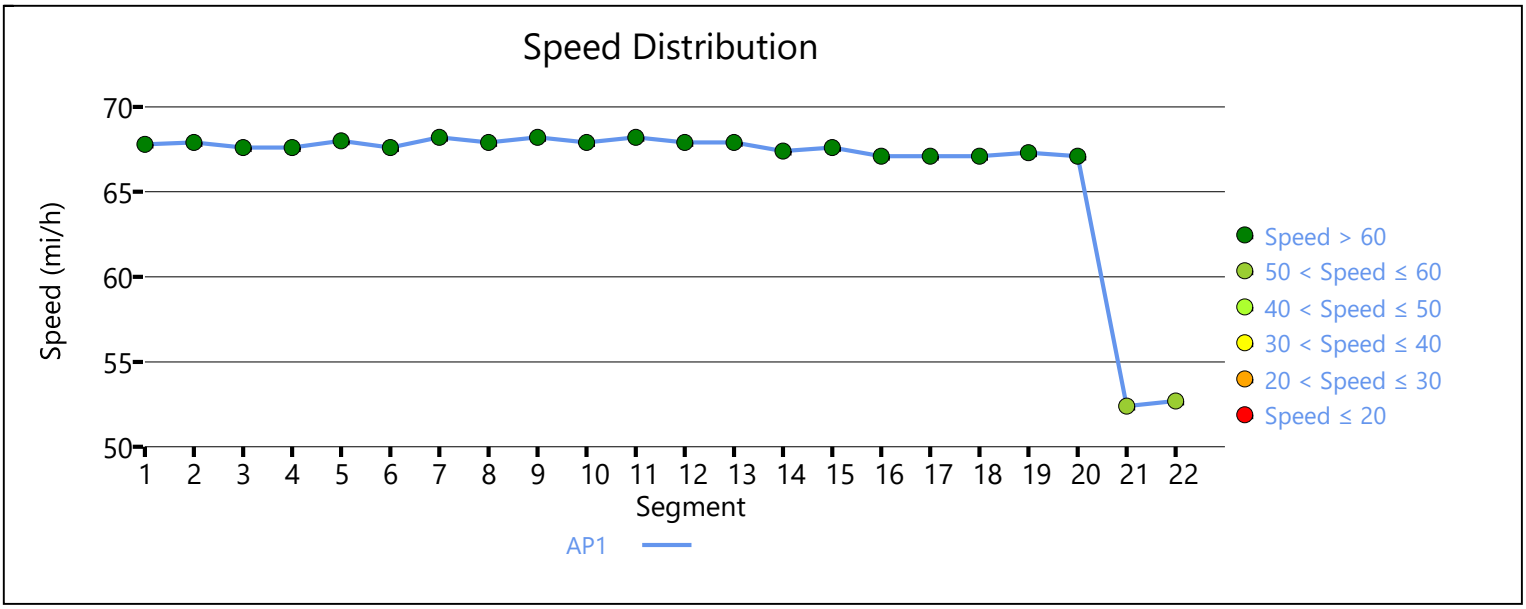
Average Speed, mi/h	52.7	Percent Followers, %	46.2
Segment Travel Time, minutes	0.36	Follower Density (FD), followers/mi/ln	3.1
Vehicle LOS	B		

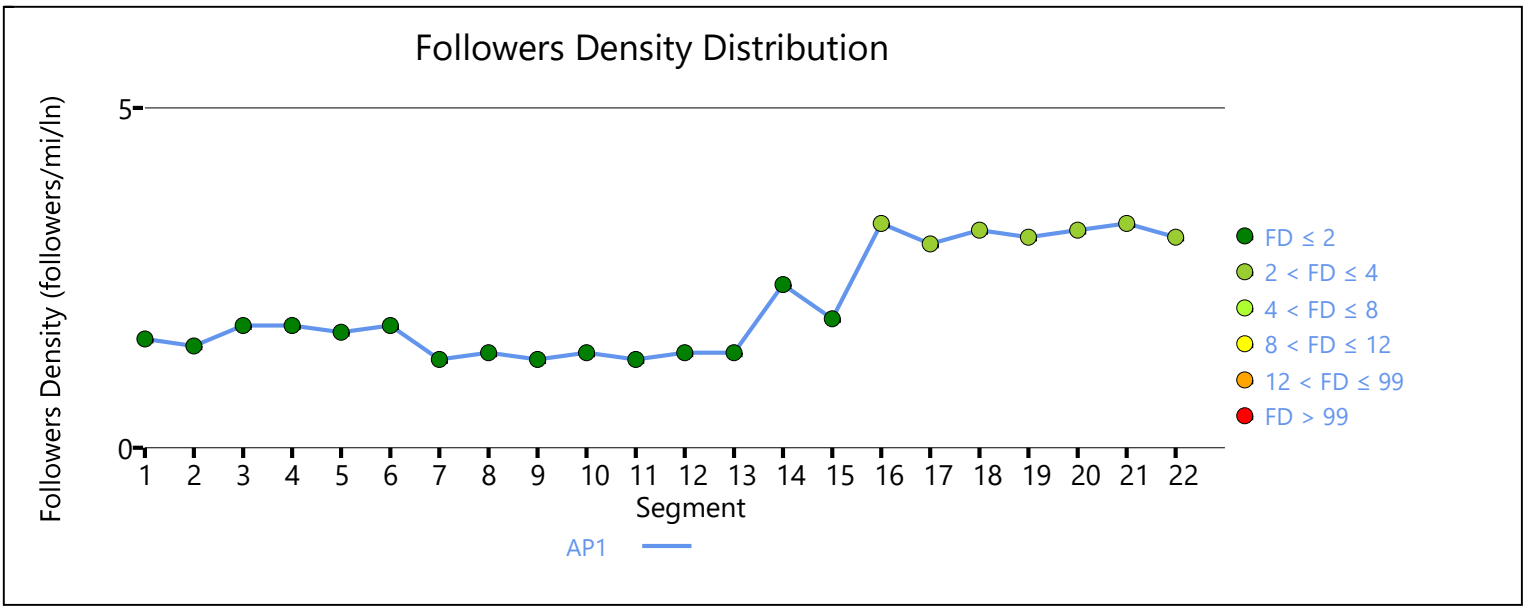
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	350	Bicycle Effective Width, ft	24
Bicycle LOS Score	5.45	Bicycle Effective Speed Factor	4.62
Bicycle LOS	E		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	446	0.23	2.0	B





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2050 NB
Jurisdiction	SDDOT	Time Analyzed	PM Peak
Project Description	SD 38 WB East of Hartford	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1727
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	848	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	8.97
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.50

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58112	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.27241	PF Power Coefficient (p)	0.76681
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	8.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1727	-	-	65.9

Vehicle Results

Average Speed, mi/h	65.9	Percent Followers, %	67.4
Segment Travel Time, minutes	0.30	Follower Density (FD), followers/mi/ln	8.7
Vehicle LOS	D		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	848	Bicycle Effective Width, ft	24
Bicycle LOS Score	5.52	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1676
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	848	Opposing Demand Flow Rate, veh/h	402
Peak Hour Factor	0.88	Total Trucks, %	8.97
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.50

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.38668	Speed Power Coefficient (p)	0.49646
PF Slope Coefficient (m)	-1.25223	PF Power Coefficient (p)	0.80275
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	8.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1676	-	-	66.2

Vehicle Results			
Average Speed, mi/h	66.2	Percent Followers, %	66.6
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	8.5
Vehicle LOS	D		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	848	Bicycle Effective Width, ft	24
Bicycle LOS Score	5.52	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 3

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1864
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	536	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.32

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58341	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26572	PF Power Coefficient (p)	0.77025
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1864	-	-	66.8

Vehicle Results

Average Speed, mi/h	66.8	Percent Followers, %	54.3
Segment Travel Time, minutes	0.32	Follower Density (FD), followers/mi/ln	4.4
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	536	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.28	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	718
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	536	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.32

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29182	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	718	-	-	66.8

Vehicle Results

Average Speed, mi/h	66.8	Percent Followers, %	55.3
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	4.4
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	536	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.28	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1738
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	536	Opposing Demand Flow Rate, veh/h	409
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.32

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.38950	Speed Power Coefficient (p)	0.49536
PF Slope Coefficient (m)	-1.24935	PF Power Coefficient (p)	0.80471
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1738	-	-	67.1

Vehicle Results

Average Speed, mi/h	67.1	Percent Followers, %	53.1
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	4.2
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	536	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.28	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	579
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	536	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.32

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29182	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	579	-	-	66.8

Vehicle Results

Average Speed, mi/h	66.8	Percent Followers, %	55.3
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	4.4
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	536	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.28	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2262
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	430	Opposing Demand Flow Rate, veh/h	314
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.25

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.37173	Speed Power Coefficient (p)	0.51243
PF Slope Coefficient (m)	-1.21815	PF Power Coefficient (p)	0.81800
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2262	-	-	67.5

Vehicle Results

Average Speed, mi/h	67.5	Percent Followers, %	45.7
Segment Travel Time, minutes	0.38	Follower Density (FD), followers/mi/ln	2.9
Vehicle LOS	B		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	430	Bicycle Effective Width, ft	24
Bicycle LOS Score	10.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 8

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	980
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	430	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.25

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	980	-	-	67.1

Vehicle Results			
Average Speed, mi/h	67.1	Percent Followers, %	49.3
Segment Travel Time, minutes	0.17	Follower Density (FD), followers/mi/ln	3.2
Vehicle LOS	B		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	430	Bicycle Effective Width, ft	24
Bicycle LOS Score	10.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 9

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	3667
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	430	Opposing Demand Flow Rate, veh/h	314
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.25

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39013	Speed Power Coefficient (p)	0.51243
PF Slope Coefficient (m)	-1.18655	PF Power Coefficient (p)	0.82939
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3667	-	-	67.5

Vehicle Results

Average Speed, mi/h	67.5	Percent Followers, %	44.5
Segment Travel Time, minutes	0.62	Follower Density (FD), followers/mi/ln	2.8
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	430	Bicycle Effective Width, ft	24
Bicycle LOS Score	10.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 10

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1846
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	430	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.25

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58311	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26629	PF Power Coefficient (p)	0.77017
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1846	-	-	67.1

Vehicle Results

Average Speed, mi/h	67.1	Percent Followers, %	48.3
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	3.1
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	430	Bicycle Effective Width, ft	24
Bicycle LOS Score	10.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2174
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	430	Opposing Demand Flow Rate, veh/h	314
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.25

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.37041	Speed Power Coefficient (p)	0.51243
PF Slope Coefficient (m)	-1.22098	PF Power Coefficient (p)	0.81685
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2174	-	-	67.5

Vehicle Results

Average Speed, mi/h	67.5	Percent Followers, %	45.8
Segment Travel Time, minutes	0.37	Follower Density (FD), followers/mi/ln	2.9
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	430	Bicycle Effective Width, ft	24
Bicycle LOS Score	10.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 12

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1277
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	430	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.25

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1277	-	-	67.1

Vehicle Results			
Average Speed, mi/h	67.1	Percent Followers, %	49.3
Segment Travel Time, minutes	0.22	Follower Density (FD), followers/mi/ln	3.2
Vehicle LOS	B		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	430	Bicycle Effective Width, ft	24
Bicycle LOS Score	10.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 13

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	779
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	430	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.25

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	779	-	-	67.1

Vehicle Results

Average Speed, mi/h	67.1	Percent Followers, %	49.3
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	3.2
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	430	Bicycle Effective Width, ft	24
Bicycle LOS Score	10.00	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	422
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	607	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	13.95
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.36

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29219	PF Power Coefficient (p)	0.75948
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	5.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	422	-	-	66.6

Vehicle Results

Average Speed, mi/h	66.6	Percent Followers, %	58.7
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	5.4
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	607	Bicycle Effective Width, ft	24
Bicycle LOS Score	7.64	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 15

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1478
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	524	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	19.53
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.31

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57671	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28298	PF Power Coefficient (p)	0.76370
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1478	-	-	66.8

Vehicle Results

Average Speed, mi/h	66.8	Percent Followers, %	54.3
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	4.3
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	524	Bicycle Effective Width, ft	24
Bicycle LOS Score	10.78	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 16

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	384
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	990	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.76
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.58

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29233	PF Power Coefficient (p)	0.75931
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	10.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	384	-	-	65.6

Vehicle Results

Average Speed, mi/h	65.6	Percent Followers, %	72.3
Segment Travel Time, minutes	0.07	Follower Density (FD), followers/mi/ln	10.9
Vehicle LOS	D		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	990	Bicycle Effective Width, ft	24
Bicycle LOS Score	7.29	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 17

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	3732
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	986	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.58

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.60878	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.21846	PF Power Coefficient (p)	0.78615
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	10.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3732	-	-	65.6

Vehicle Results

Average Speed, mi/h	65.6	Percent Followers, %	70.0

Segment Travel Time, minutes	0.65	Follower Density (FD), followers/mi/ln	10.5
Vehicle LOS	D		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	986	Bicycle Effective Width, ft	24
Bicycle LOS Score	7.03	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 18

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1360
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	986	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.58

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57450	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29014	PF Power Coefficient (p)	0.76012
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	10.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1360	-	-	65.6

Vehicle Results

Average Speed, mi/h	65.6	Percent Followers, %	72.1
Segment Travel Time, minutes	0.24	Follower Density (FD), followers/mi/ln	10.8
Vehicle LOS	D		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	986	Bicycle Effective Width, ft	24
Bicycle LOS Score	7.03	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 19

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1595
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	986	Opposing Demand Flow Rate, veh/h	445
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.58

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39614	Speed Power Coefficient (p)	0.48975
PF Slope Coefficient (m)	-1.26001	PF Power Coefficient (p)	0.79959
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	10.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1595	-	-	65.9

Vehicle Results

Average Speed, mi/h	65.9	Percent Followers, %	71.2
Segment Travel Time, minutes	0.28	Follower Density (FD), followers/mi/ln	10.7
Vehicle LOS	D		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	986	Bicycle Effective Width, ft	24
Bicycle LOS Score	7.03	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 20

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	595
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	986	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	12.21
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.58

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29239	PF Power Coefficient (p)	0.75923
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	10.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	595	-	-	65.7

Vehicle Results

Average Speed, mi/h	65.7	Percent Followers, %	72.2
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	10.8
Vehicle LOS	D		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	986	Bicycle Effective Width, ft	24
Bicycle LOS Score	7.03	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 21

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	958
Measured FFS	Measured	Free-Flow Speed, mi/h	55.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	674	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	10.81
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.40

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	55.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.43859	PF Power Coefficient (p)	0.72596
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	8.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	958	-	-	51.4

Vehicle Results

Average Speed, mi/h	51.4	Percent Followers, %	66.0
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	8.7
Vehicle LOS	D		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	674	Bicycle Effective Width, ft	24
Bicycle LOS Score	5.78	Bicycle Effective Speed Factor	4.62
Bicycle LOS	F		

Segment 22

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1659
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	674	Opposing Demand Flow Rate, veh/h	368
Peak Hour Factor	0.88	Total Trucks, %	10.81
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.40

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.37738	Speed Power Coefficient (p)	0.50221
PF Slope Coefficient (m)	-1.31799	PF Power Coefficient (p)	0.78037
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	7.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1659	-	-	56.7

Vehicle Results

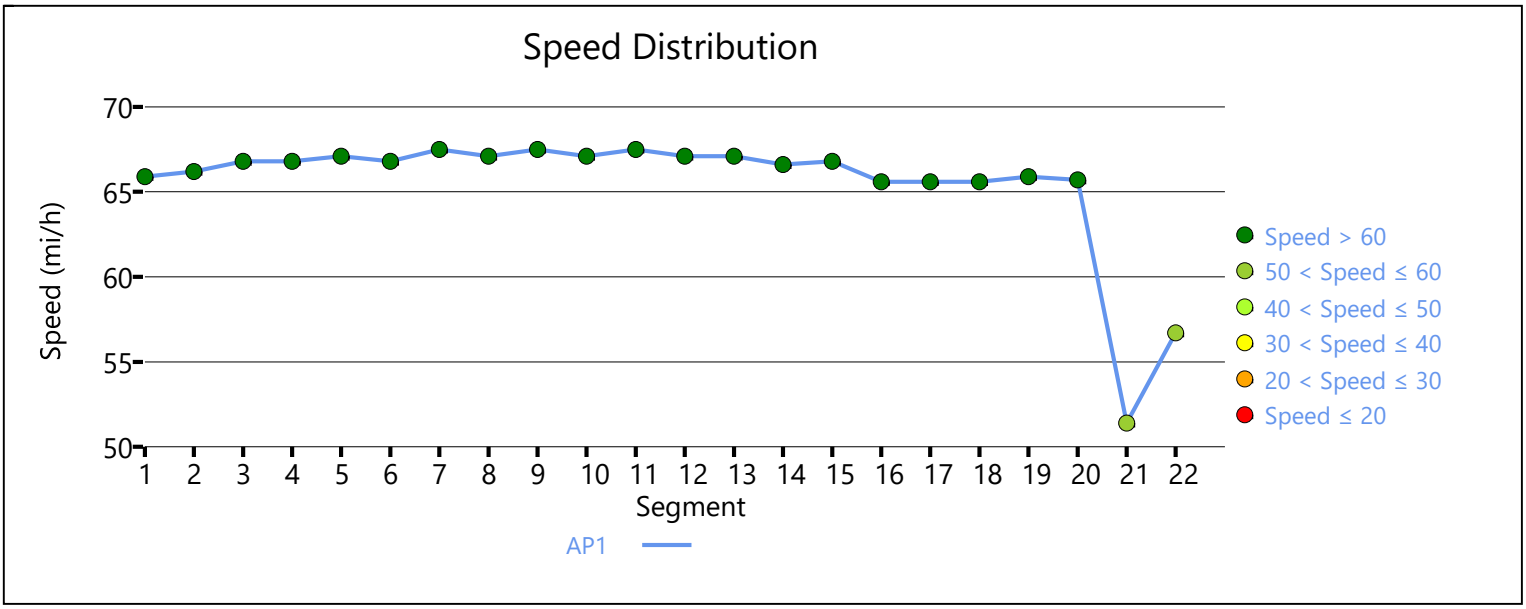
Average Speed, mi/h	56.7	Percent Followers, %	62.0
Segment Travel Time, minutes	0.33	Follower Density (FD), followers/mi/ln	7.4
Vehicle LOS	C		

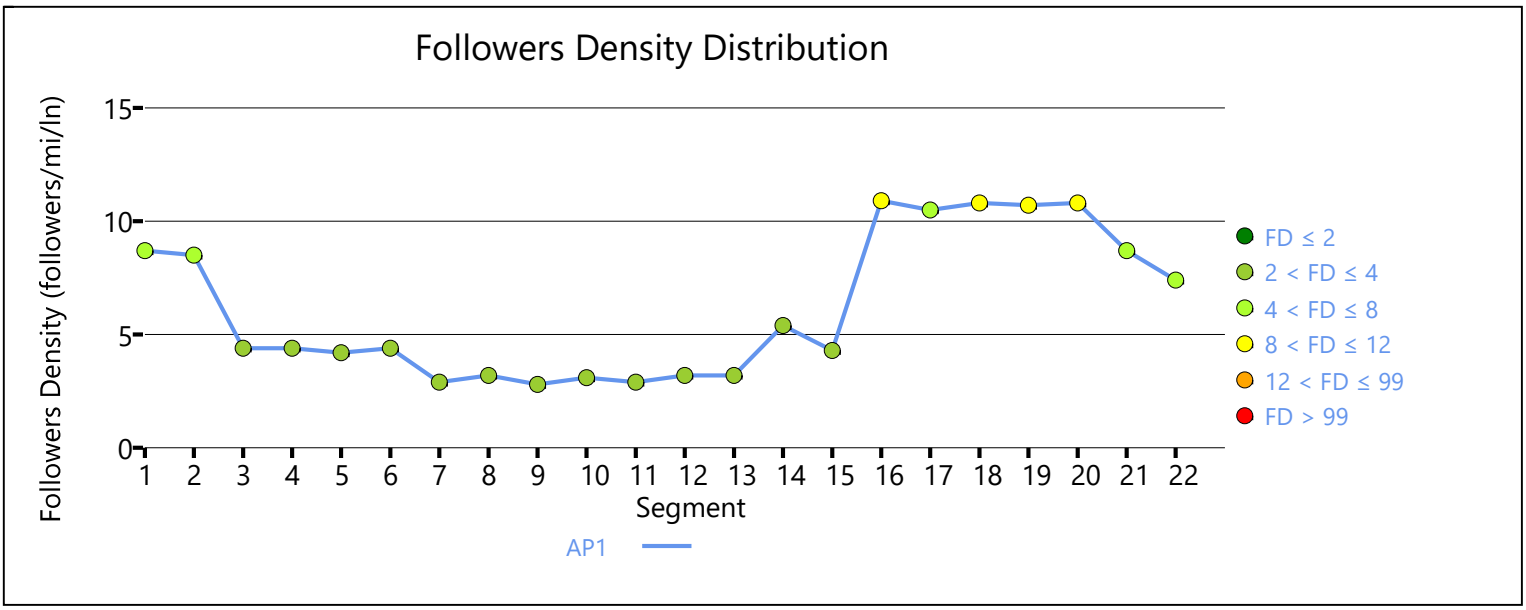
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	674	Bicycle Effective Width, ft	24
Bicycle LOS Score	5.78	Bicycle Effective Speed Factor	4.62
Bicycle LOS	F		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	894	0.71	6.0	C





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2050 NB
Jurisdiction	SDDOT	Time Analyzed	AM Peak
Project Description	West of Hartford SD 38 EB	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1069
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	169
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30713	Speed Power Coefficient (p)	0.54838
PF Slope Coefficient (m)	-1.23090	PF Power Coefficient (p)	0.80942
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1069	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	32.4
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	664
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	664	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	35.8
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1871
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	169
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.31694	Speed Power Coefficient (p)	0.54838
PF Slope Coefficient (m)	-1.20586	PF Power Coefficient (p)	0.82063
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1871	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	31.5
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	925
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	925	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	35.8
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4476
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	169
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35043	Speed Power Coefficient (p)	0.54838
PF Slope Coefficient (m)	-1.15155	PF Power Coefficient (p)	0.84082
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4476	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	29.6
Segment Travel Time, minutes	0.74	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	896
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	896	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	35.8
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	743
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	169
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30713	Speed Power Coefficient (p)	0.54838
PF Slope Coefficient (m)	-1.23090	PF Power Coefficient (p)	0.80942
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	743	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	32.4
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2717
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	245	Opposing Demand Flow Rate, veh/h	165
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32768	Speed Power Coefficient (p)	0.54983
PF Slope Coefficient (m)	-1.17918	PF Power Coefficient (p)	0.83165
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2717	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	30.7
Segment Travel Time, minutes	0.45	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	245	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.93	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1013
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	245	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29345	PF Power Coefficient (p)	0.75792
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1013	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	36.0
Segment Travel Time, minutes	0.17	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	245	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.93	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4569
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	245	Opposing Demand Flow Rate, veh/h	165
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34958	Speed Power Coefficient (p)	0.54983
PF Slope Coefficient (m)	-1.14981	PF Power Coefficient (p)	0.84100
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	4569	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	29.7
Segment Travel Time, minutes	0.76	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	245	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.93	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5676
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	244	Opposing Demand Flow Rate, veh/h	165
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36055	Speed Power Coefficient (p)	0.54983
PF Slope Coefficient (m)	-1.14222	PF Power Coefficient (p)	0.84066
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5676	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	29.5
Segment Travel Time, minutes	0.94	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	244	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 12

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	657
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	244	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29350	PF Power Coefficient (p)	0.75785
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	657	-	-	68.0

Vehicle Results			
Average Speed, mi/h	68.0	Percent Followers, %	35.9
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	244	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 13

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	6009
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	244	Opposing Demand Flow Rate, veh/h	165
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36364	Speed Power Coefficient (p)	0.54983
PF Slope Coefficient (m)	-1.14089	PF Power Coefficient (p)	0.83997

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6009	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	29.5
Segment Travel Time, minutes	1.00	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	244	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	891
Measured FFS	Measured	Free-Flow Speed, mi/h	50.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	244	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	50.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.47375	PF Power Coefficient (p)	0.71164
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	891	-	-	48.0

Vehicle Results

Average Speed, mi/h	48.0	Percent Followers, %	41.8
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	2.1
Vehicle LOS	B		

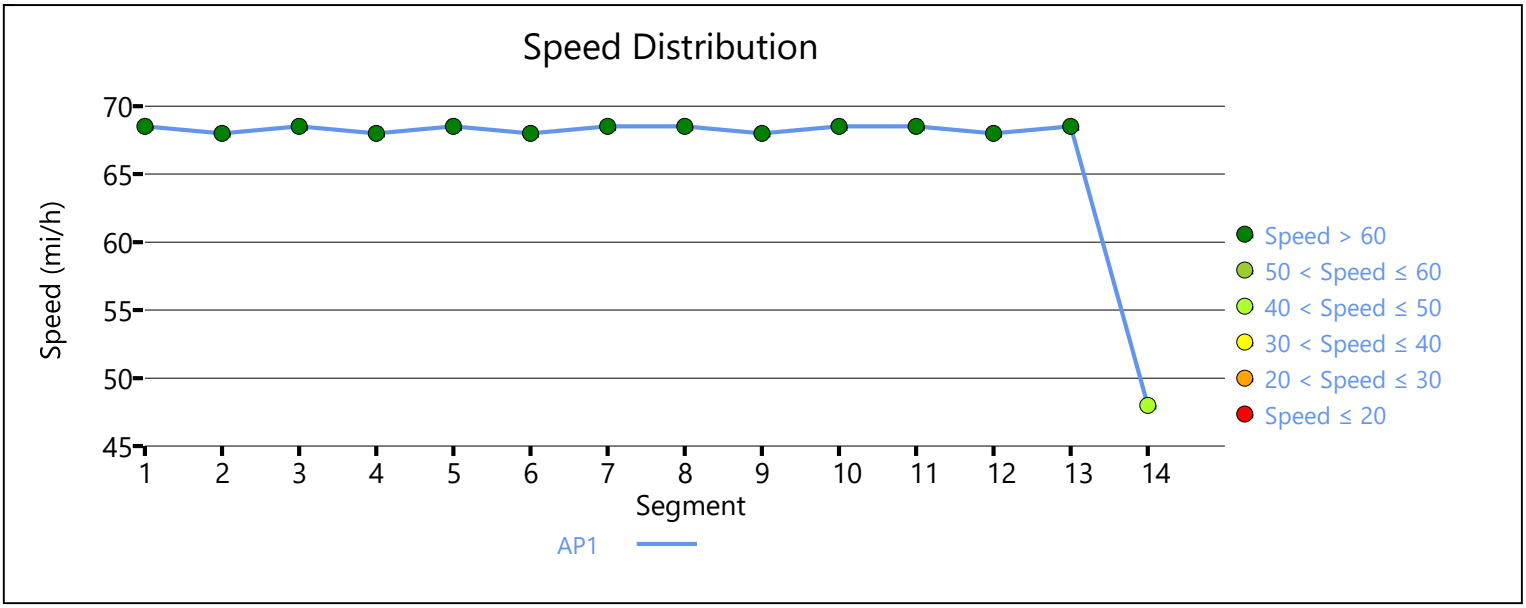
Bicycle Results

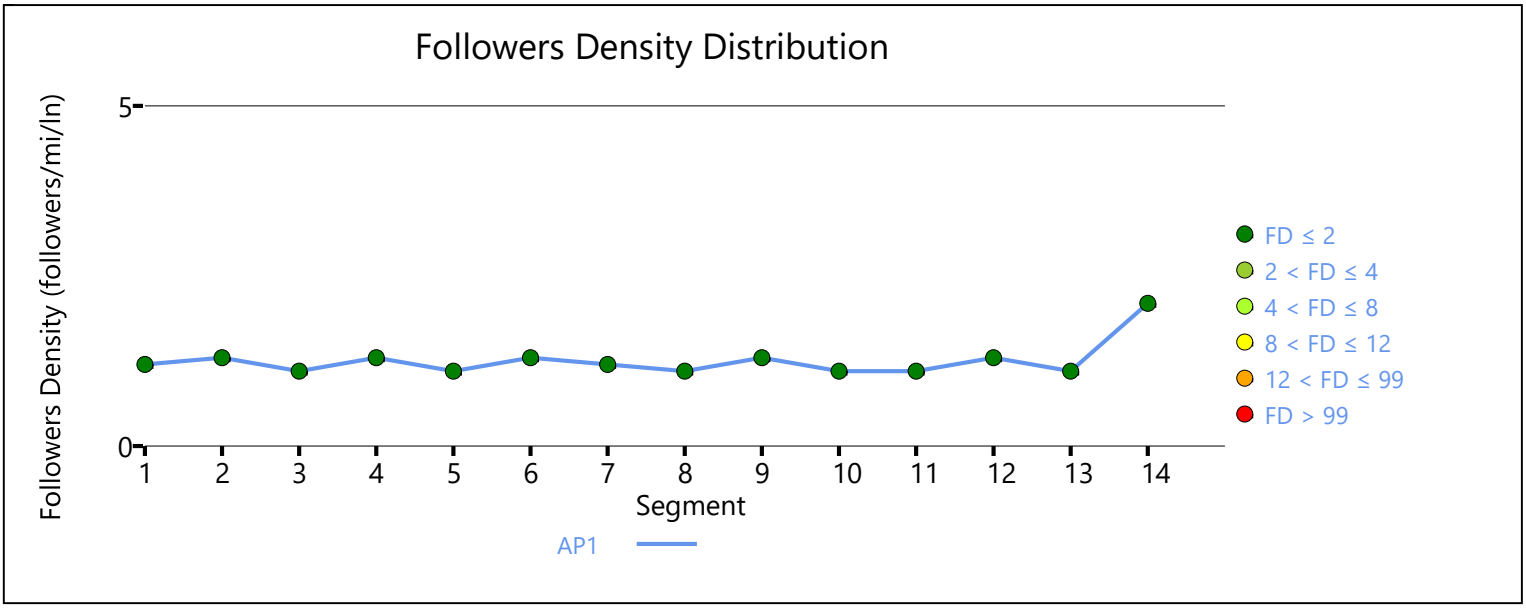
Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	244	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.59	Bicycle Effective Speed Factor	4.42
Bicycle LOS	C		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	327	0.11	1.1	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2050 NB
Jurisdiction	SDDOT	Time Analyzed	PM Peak
Project Description	West of Hartford SD 38 EB	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1069
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	286
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34767	Speed Power Coefficient (p)	0.51808
PF Slope Coefficient (m)	-1.25475	PF Power Coefficient (p)	0.80124
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1069	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	24.8
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	664
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	664	-	-	68.6

Vehicle Results			
Average Speed, mi/h	68.6	Percent Followers, %	27.2
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 3

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	1871
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	286
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35747	Speed Power Coefficient (p)	0.51808
PF Slope Coefficient (m)	-1.22915	PF Power Coefficient (p)	0.81213
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1871	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.9
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	925
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	925	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.2
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4476
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	286
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39096	Speed Power Coefficient (p)	0.51808
PF Slope Coefficient (m)	-1.17364	PF Power Coefficient (p)	0.83159
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4476	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	22.2
Segment Travel Time, minutes	0.74	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	896
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	896	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.2
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	743
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	286
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34767	Speed Power Coefficient (p)	0.51808
PF Slope Coefficient (m)	-1.25475	PF Power Coefficient (p)	0.80124
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	743	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	24.8
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 8

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	2717
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	289
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.37072	Speed Power Coefficient (p)	0.51760
PF Slope Coefficient (m)	-1.20338	PF Power Coefficient (p)	0.82225
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2717	-	-	68.9

Vehicle Results			
Average Speed, mi/h	68.9	Percent Followers, %	23.8
Segment Travel Time, minutes	0.45	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.40	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 9

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1013
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29345	PF Power Coefficient (p)	0.75792
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1013	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.0
Segment Travel Time, minutes	0.17	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.40	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4569
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	289
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39263	Speed Power Coefficient (p)	0.51760
PF Slope Coefficient (m)	-1.17332	PF Power Coefficient (p)	0.83118
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	4569	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	22.9
Segment Travel Time, minutes	0.75	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.40	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5676
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	280
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.40080	Speed Power Coefficient (p)	0.51956
PF Slope Coefficient (m)	-1.16417	PF Power Coefficient (p)	0.83135
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5676	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	22.8
Segment Travel Time, minutes	0.94	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.28	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 12

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	657
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29350	PF Power Coefficient (p)	0.75785
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	657	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.0
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.28	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 13

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	6009
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	280
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.40389	Speed Power Coefficient (p)	0.51956
PF Slope Coefficient (m)	-1.16281	PF Power Coefficient (p)	0.83065

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6009	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	22.8
Segment Travel Time, minutes	0.99	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.28	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	891
Measured FFS	Measured	Free-Flow Speed, mi/h	50.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	50.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.47375	PF Power Coefficient (p)	0.71164
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	891	-	-	48.5

Vehicle Results

Average Speed, mi/h	48.5	Percent Followers, %	33.4
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

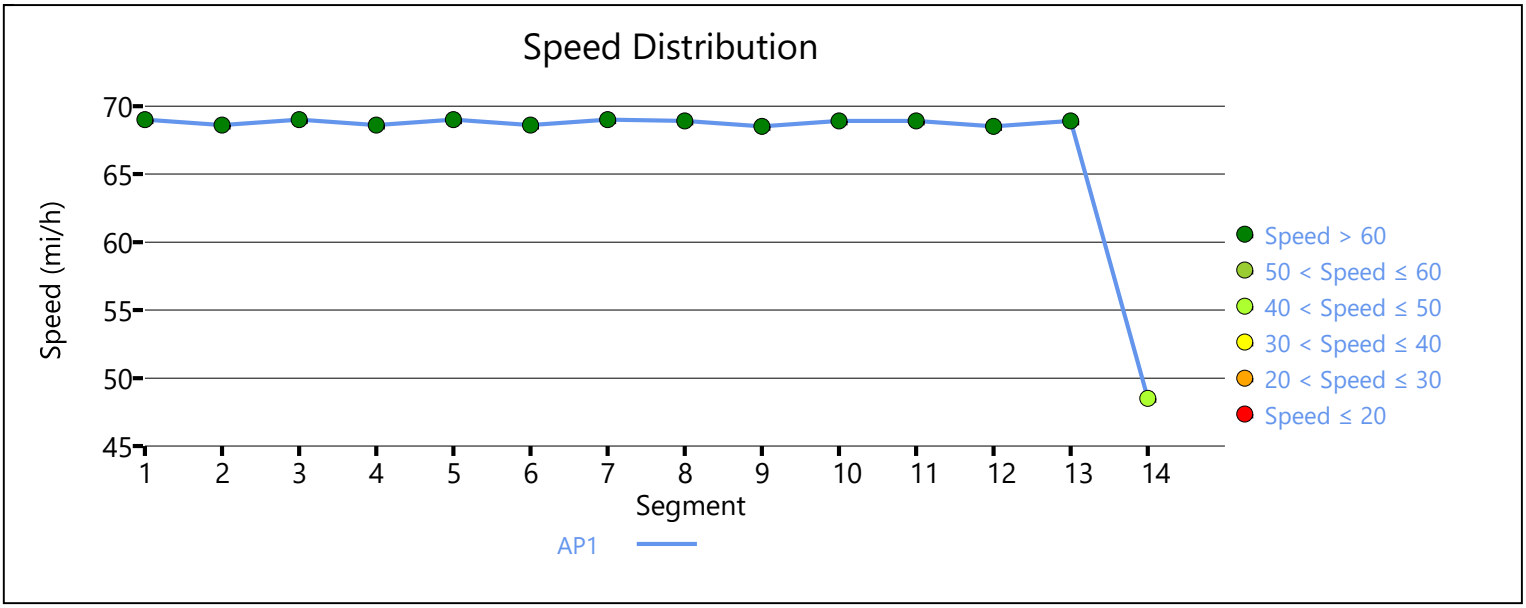
Bicycle Results

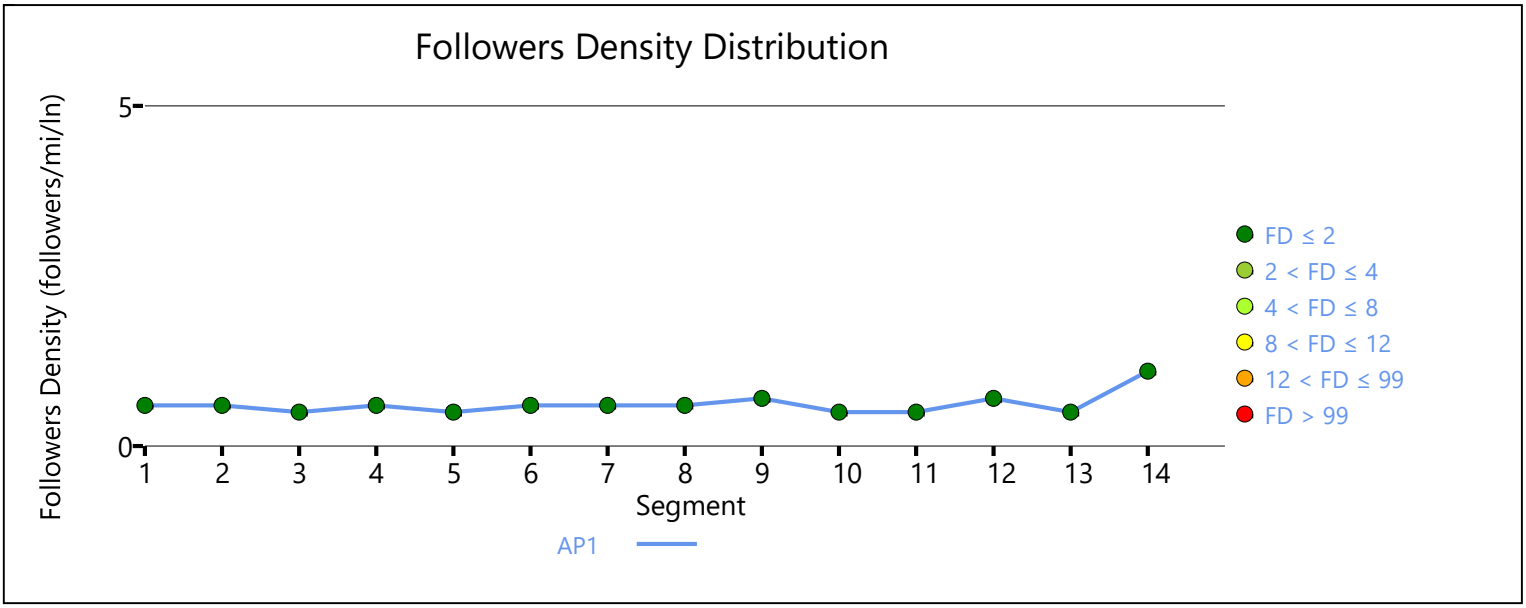
Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.06	Bicycle Effective Speed Factor	4.42
Bicycle LOS	A		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	216	0.05	0.6	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2050 NB
Jurisdiction	SDDOT	Time Analyzed	AM Peak
Project Description	WB 38 West of Hartford	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	10549
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	244
Peak Hour Factor	0.88	Total Trucks, %	12.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.42827	Speed Power Coefficient (p)	0.52768
PF Slope Coefficient (m)	-1.16689	PF Power Coefficient (p)	0.80729
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	10549	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.8
Segment Travel Time, minutes	1.74	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	4.94	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2793
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	244
Peak Hour Factor	0.88	Total Trucks, %	12.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35767	Speed Power Coefficient (p)	0.52768
PF Slope Coefficient (m)	-1.19319	PF Power Coefficient (p)	0.82737
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2793	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.5
Segment Travel Time, minutes	0.46	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	4.94	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3825
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	245
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.37079	Speed Power Coefficient (p)	0.52741
PF Slope Coefficient (m)	-1.17529	PF Power Coefficient (p)	0.83222
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3825	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.1
Segment Travel Time, minutes	0.63	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	791
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29355	PF Power Coefficient (p)	0.75779
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	791	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.1
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3414
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	245
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36595	Speed Power Coefficient (p)	0.52741
PF Slope Coefficient (m)	-1.18179	PF Power Coefficient (p)	0.83026
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3414	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.2
Segment Travel Time, minutes	0.56	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	286
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29355	PF Power Coefficient (p)	0.75779
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	286	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.1
Segment Travel Time, minutes	0.05	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	463
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29353	PF Power Coefficient (p)	0.75782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	463	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.6
Segment Travel Time, minutes	0.08	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4822
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	243
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.38079	Speed Power Coefficient (p)	0.52796
PF Slope Coefficient (m)	-1.16377	PF Power Coefficient (p)	0.83451
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4822	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	23.2
Segment Travel Time, minutes	0.79	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	861
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29353	PF Power Coefficient (p)	0.75782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	861	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.6
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1556
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	243
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33831	Speed Power Coefficient (p)	0.52796
PF Slope Coefficient (m)	-1.23554	PF Power Coefficient (p)	0.80871
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1556	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	25.5
Segment Travel Time, minutes	0.26	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	799
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29353	PF Power Coefficient (p)	0.75782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	799	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.6
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 12

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	857
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	243
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33390	Speed Power Coefficient (p)	0.52796
PF Slope Coefficient (m)	-1.24754	PF Power Coefficient (p)	0.80350
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	857	-	-	68.9

Vehicle Results			
Average Speed, mi/h	68.9	Percent Followers, %	25.9
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 13

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1288
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39677	PF Power Coefficient (p)	0.73640

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1288	-	-	58.5

Vehicle Results

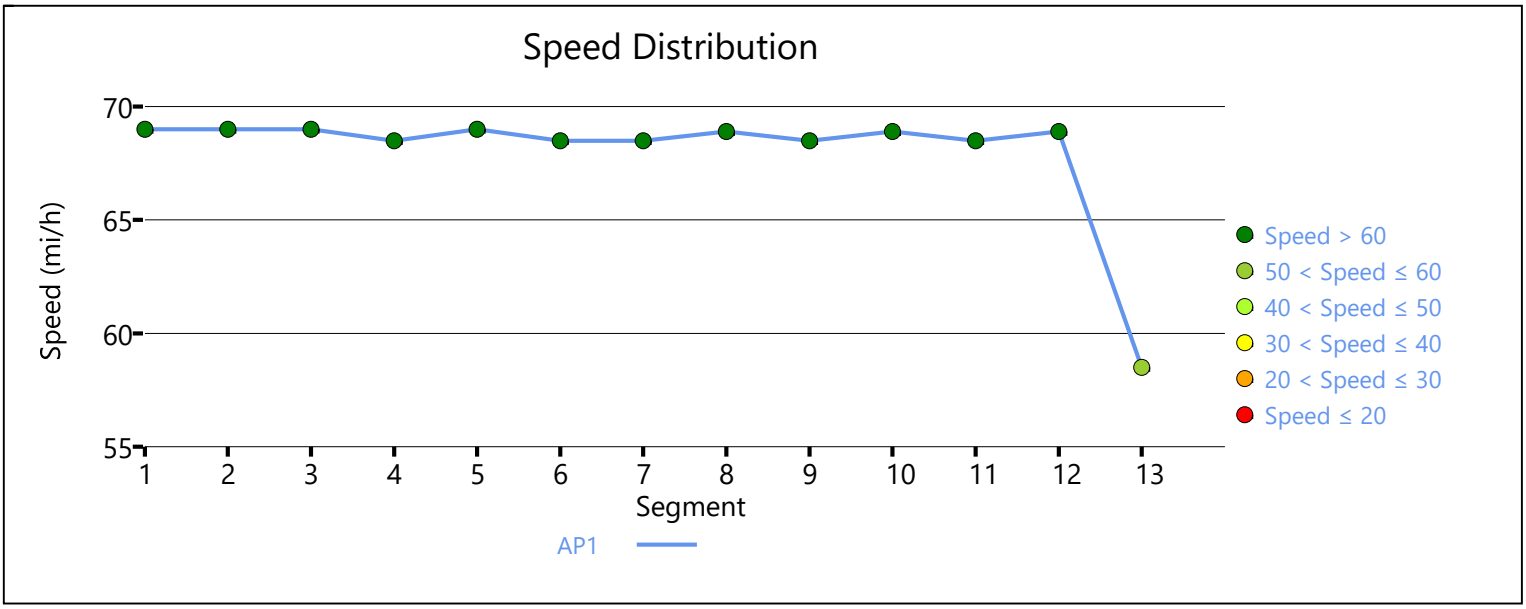
Average Speed, mi/h	58.5	Percent Followers, %	31.5
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	0.9
Vehicle LOS	A		

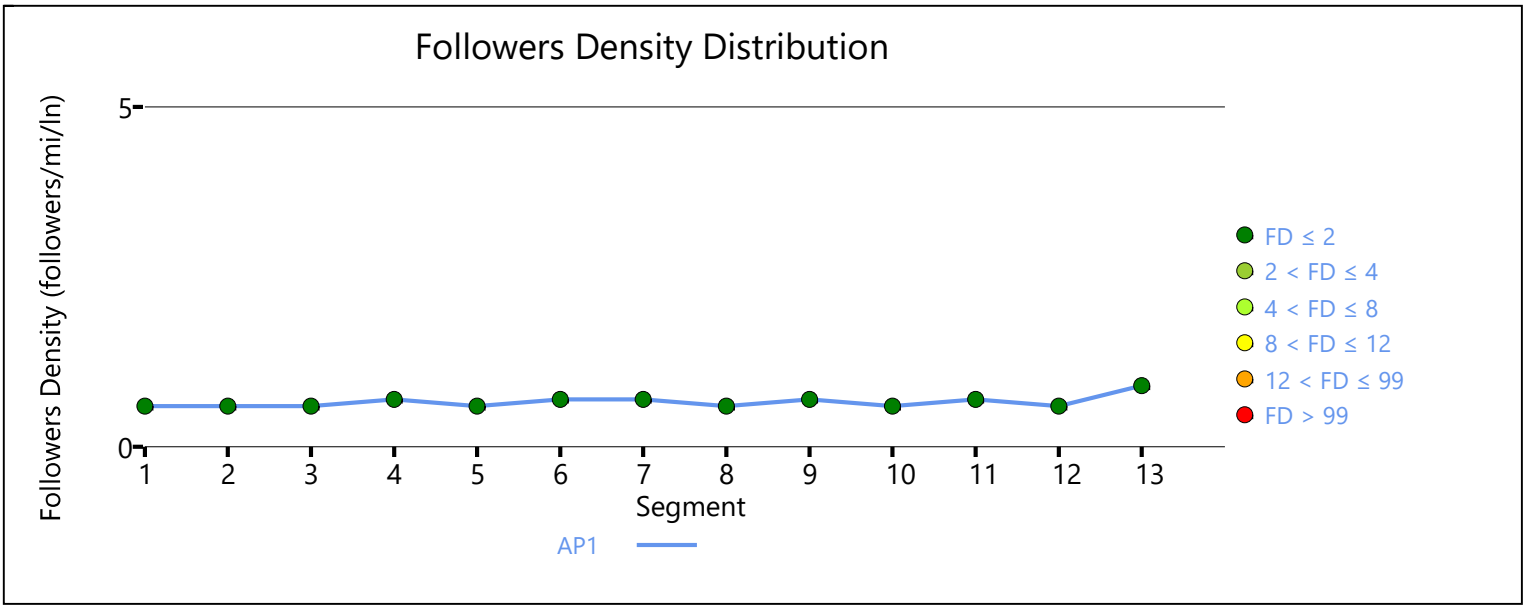
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.14	Bicycle Effective Speed Factor	4.79
Bicycle LOS	A		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	224	0.05	0.6	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2050 NB
Jurisdiction	SDDOT	Time Analyzed	PM Peak
Project Description	WB 38 West of Hartford	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	10549
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	280	Opposing Demand Flow Rate, veh/h	164
Peak Hour Factor	0.88	Total Trucks, %	1.94
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39885	Speed Power Coefficient (p)	0.55020
PF Slope Coefficient (m)	-1.15143	PF Power Coefficient (p)	0.81244
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	10549	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	33.6
Segment Travel Time, minutes	1.76	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	280	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.64	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2793
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	280	Opposing Demand Flow Rate, veh/h	164
Peak Hour Factor	0.88	Total Trucks, %	1.94
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32824	Speed Power Coefficient (p)	0.55020
PF Slope Coefficient (m)	-1.17723	PF Power Coefficient (p)	0.83227
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2793	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	33.5
Segment Travel Time, minutes	0.46	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	280	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.64	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3825
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	289	Opposing Demand Flow Rate, veh/h	164
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34098	Speed Power Coefficient (p)	0.55020
PF Slope Coefficient (m)	-1.15833	PF Power Coefficient (p)	0.83897
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3825	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	33.5
Segment Travel Time, minutes	0.64	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	289	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	791
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	289	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29358	PF Power Coefficient (p)	0.75776
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	791	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.6
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	289	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3414
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	289	Opposing Demand Flow Rate, veh/h	164
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33614	Speed Power Coefficient (p)	0.55020
PF Slope Coefficient (m)	-1.16472	PF Power Coefficient (p)	0.83695
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3414	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	33.7
Segment Travel Time, minutes	0.57	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	289	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	286
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	289	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29358	PF Power Coefficient (p)	0.75776
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	286	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.6
Segment Travel Time, minutes	0.05	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	289	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	463
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29347	PF Power Coefficient (p)	0.75789
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	463	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.4
Segment Travel Time, minutes	0.08	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 8

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	4822
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	157
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34895	Speed Power Coefficient (p)	0.55243
PF Slope Coefficient (m)	-1.14563	PF Power Coefficient (p)	0.84199
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4822	-	-	68.3

Vehicle Results			
Average Speed, mi/h	68.3	Percent Followers, %	33.0
Segment Travel Time, minutes	0.80	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 9

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	861
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29347	PF Power Coefficient (p)	0.75789
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	861	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.4
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1556
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	157
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30647	Speed Power Coefficient (p)	0.55243
PF Slope Coefficient (m)	-1.21611	PF Power Coefficient (p)	0.81541
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1556	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	35.5
Segment Travel Time, minutes	0.26	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	799
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29347	PF Power Coefficient (p)	0.75789
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	799	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.4
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 12

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	857
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	157
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30206	Speed Power Coefficient (p)	0.55243
PF Slope Coefficient (m)	-1.22789	PF Power Coefficient (p)	0.81007
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	857	-	-	68.3

Vehicle Results			
Average Speed, mi/h	68.3	Percent Followers, %	36.0
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 13

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1288
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39671	PF Power Coefficient (p)	0.73647

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1288	-	-	57.7

Vehicle Results

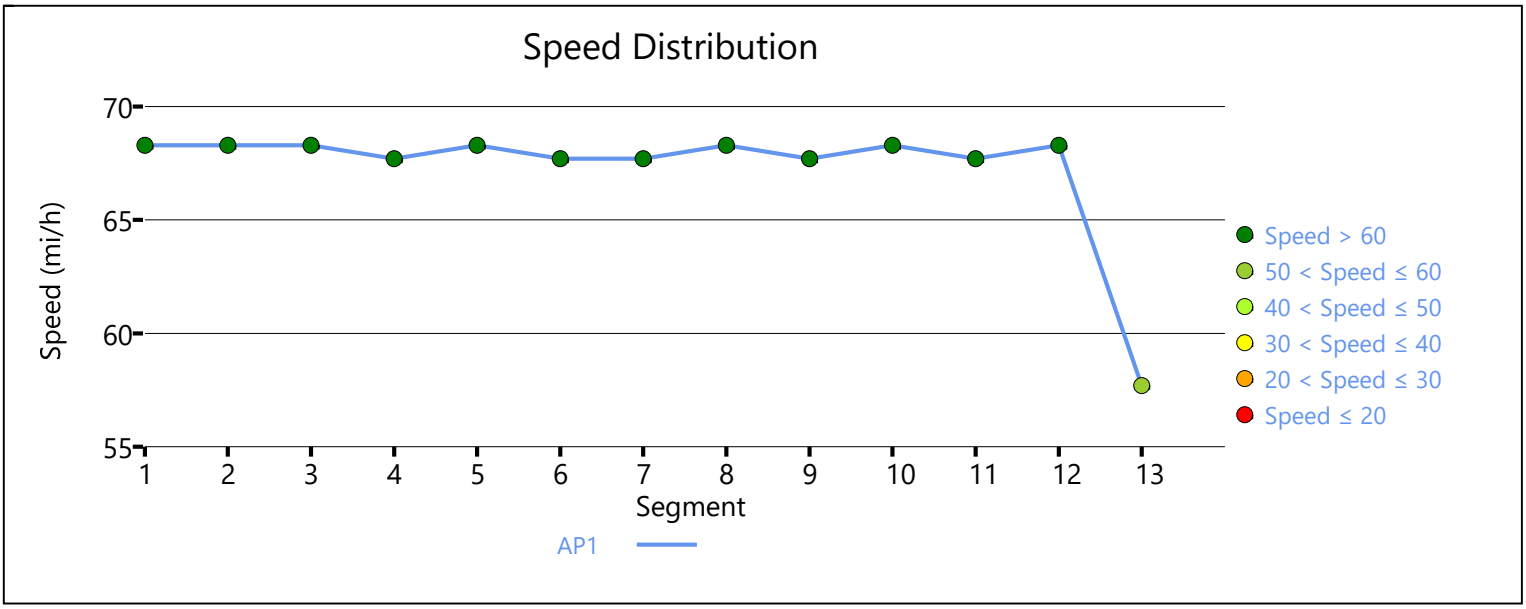
Average Speed, mi/h	57.7	Percent Followers, %	42.7
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	2.1
Vehicle LOS	B		

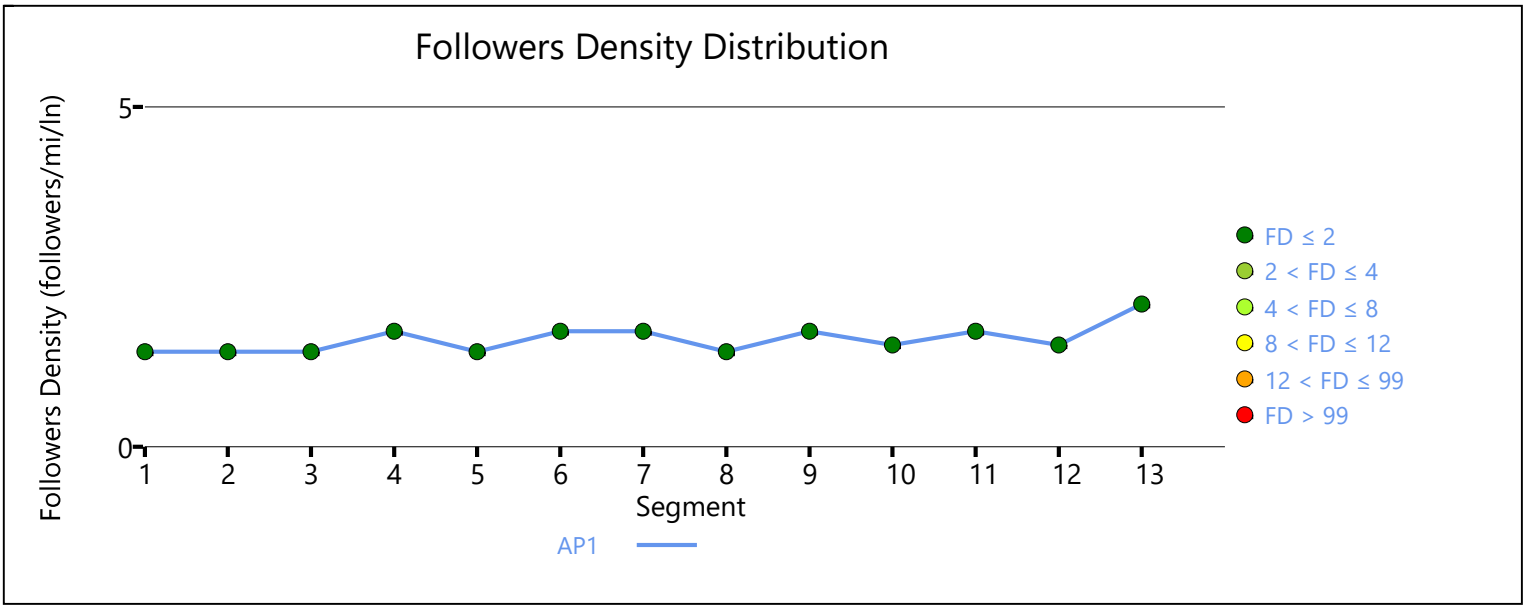
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.86	Bicycle Effective Speed Factor	4.79
Bicycle LOS	C		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	382	0.15	1.5	A





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HCS Two-Way Stop-Control Report

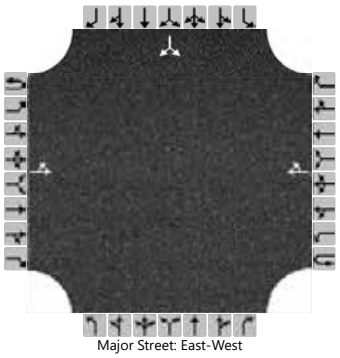
General Information

Analyst	CEC
Agency/Co.	HRG
Date Performed	7/21/2023
Analysis Year	2023
Time Analyzed	Event Arrival
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 Expressway
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 Expressway
Peak Hour Factor	0.79
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		62	77				96	240						7		0
Percent Heavy Vehicles (%)		2												2		2
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.12												6.42		6.22
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.22												3.52		3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		78													9	
Capacity, c (veh/h)		1134													474	
v/c Ratio		0.07													0.02	
95% Queue Length, Q_{95} (veh)		0.2													0.1	
Control Delay (s/veh)		8.4	0.6												12.7	
Level of Service (LOS)		A	A												B	
Approach Delay (s/veh)	4.1												12.7			
Approach LOS	A												B			

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HCS Two-Way Stop-Control Report

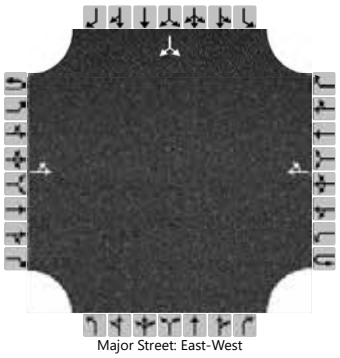
General Information

Analyst	CEC
Agency/Co.	HRG
Date Performed	7/21/2023
Analysis Year	2023
Time Analyzed	Departure
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 Expressway
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 Expressway
Peak Hour Factor	0.71
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		2	29				5	1						349		135
Percent Heavy Vehicles (%)		2												2		2
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.12												6.42		6.22
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.22												3.52		3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		3													682	
Capacity, c (veh/h)		1612													983	
v/c Ratio		0.00													0.69	
95% Queue Length, Q_{95} (veh)		0.0													5.9	
Control Delay (s/veh)		7.2	0.0												16.5	
Level of Service (LOS)		A	A												C	
Approach Delay (s/veh)		0.5												16.5		
Approach LOS		A												C		

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SD38 Corridor Study

ENVIRONMENTAL SCREENING REPORT

SOUTH DAKOTA SD 38 CORRIDOR STUDY

MINNEHAHA COUNTY, SOUTH DAKOTA

SUBMITTED ON:
November 1, 2024

SUBMITTED TO:

South Dakota Department of Transportation
700 East Broadway Avenue
Pierre, SD 57501

Federal Highway Administration
South Dakota Division
116 East Dakota Avenue, Suite A
Pierre, SD 57501

As consistent with 23 CFR 450

SUBMITTED BY:

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INTRODUCTION

PROJECT BACKGROUND

The area of interest for the study is the corridor of South Dakota Highway 38 (SD 38) from the east intersection with South Dakota Highway 19 (SD 19) in the Town of Humboldt (Humboldt) to Marion Road in Sioux Falls, Minnehaha County. The South Dakota Department of Transportation (SDDOT) has undertaken this Environmental Screening Report to develop a more thorough understanding of this corridor. The report shall evaluate the existing and projected future operating conditions and features of this corridor with the goal of identifying existing environmental conditions and anticipated problem areas. The results of this effort may ultimately be used to support a National Environmental Policy Act (NEPA) decision and final design.

This Environmental Screening Report identifies environmental resources and environmentally sensitive areas and is composed of readily available data and limited field survey information. The purpose of this screening report is to identify resources early in the planning process to avoid fatal flaws and to consider sensitive environmental resources. The intent of this screening report is not to identify impacts but rather to identify potential resource areas for use in an alternatives analysis to avoid and minimize impacts to resources. As each identified transportation improvement progresses to a specific project, this process can be used to develop alternatives that meet the purpose and need. If a recommended improvement receives funding, the results of the Environmental Screening Report will be carried forward at that time into project development, additional environmental review (NEPA-level or similar local environmental review process), design, and ultimately construction, maintenance, and operations.

The previous planning studies or information that are relevant to the project are noted below in chronological order:

- In 2015, **Sioux Falls Metropolitan Planning Organization (MPO) Bicycle Plan** was completed to consider bike route connections between county roads and the Sioux Falls Metro Area Cities, which includes Brandon, Crooks, Harrisburg, Hartford, Sioux Falls, and Tea.
- In 2015, Minnehaha County adopted the **Envision 2035 Comprehensive Plan** for the purpose of protecting and guiding the physical, social, economic, and environmental development of the county; to protect the tax base; to encourage a distribution of population or mode of land utilization that will facilitate the economical and adequate provisions of transportation, roads, water supply, drainage, sanitation, education, recreation, or other public requirements to lessen governmental expenditure; and to conserve and develop natural resources.
- In 2016, the **Shape Sioux Falls 2040 Comprehensive Plan** was adopted. Updates to this comprehensive plan were completed in 2019 and 2022 to accommodate maps for development areas, sanitary availability, water and roads, drainage and future land uses.
- In 2017, the **Hartford Comprehensive Plan 2017-2037** was completed to accomplish two primary purposes. One to address the planning requirements of state law while also providing a sound and logical basis for city growth and management strategies. Two, to provide some predictability about the potential land uses and timing of development so that both public and private sectors can make informed decisions in the area of real estate and capital investments.
- In 2003, the **Humboldt Comprehensive Plan 2003 – 2025** was completed to accomplish three main goals. The goals with more specific objectives include to ensure the health and safety of citizens, protect natural resources, and enhance the visual quality of the community.
- In 2020, the **Go Sioux Falls Long Range Transportation Plan** was completed to guide transportation planning activities and strategies to shape the greater Sioux Falls region's transportation network.
- Ongoing is the **South Dakota Department of Transportation Pavement Management System** which identified these corridors as needing maintenance.

PROJECT LOCATION

The study focuses on a 14.2-mile stretch of SD 38, an east/west two-lane, rural principal arterial highway. The Project Study Area is in Minnehaha County and extends from the east intersection with SD 19 in Humboldt to Marion Road in Sioux Falls. The SD 38 corridor is shown in **Figure 1**.

The Project Study Area begins at the eastern city limits of Humboldt and continues east through a predominately rural agricultural area with scattered rural residences and farmsteads until reaching the City of Hartford (Hartford). The reach of SD 38 through Hartford is urbanized, with numerous businesses, residences, and intersecting city streets present. The Central Valley Golf Course, West Central High School, and the Hartford Cemetery are also located adjacent to SD 38 within the Hartford city limits. An unnamed tributary of Skunk Creek meanders adjacent to the south side of SD 38 beginning southeast of the intersection of SD 38 and 464th Avenue/Railroad Street in Hartford, eventually connecting to Skunk Creek northwest of the SD 38 and 466th Avenue intersection. East of Hartford, the SD 38 alignment is to the southeast, eventually crossing the Interstate 90 (I-90) corridor at Exit 390 and continuing to the east until reaching Marion Road in Sioux Falls. Between Hartford and Sioux Falls, four smaller residential developments exist: Songbird Acres, Hartford Heights, Maple Pass, and Shatter's Fourth Addition. Aside from these residential developments, the Project Study Area east of Hartford to Sioux Falls is predominately agricultural, with scattered rural residential homes and commercial and industrial businesses. SD 38 crosses the main channel of Skunk Creek approximately 0.5-mile east of the intersection with I-90 and crosses two unnamed tributaries and the main channel of Willow Creek on the eastern end of the Project Study Area. The study segment of SD 38 is predominantly a rural two-lane highway. The vertical profile of the roadway is flat with some rolling terrain, primarily associated with stream drainages. There are a total of eighteen study intersections reviewed as part of the existing conditions assessment, including seventeen stop-controlled intersections and one traffic signal-controlled intersection. Refer to **Table 1**.

Table 1. SD 38 Study Intersections

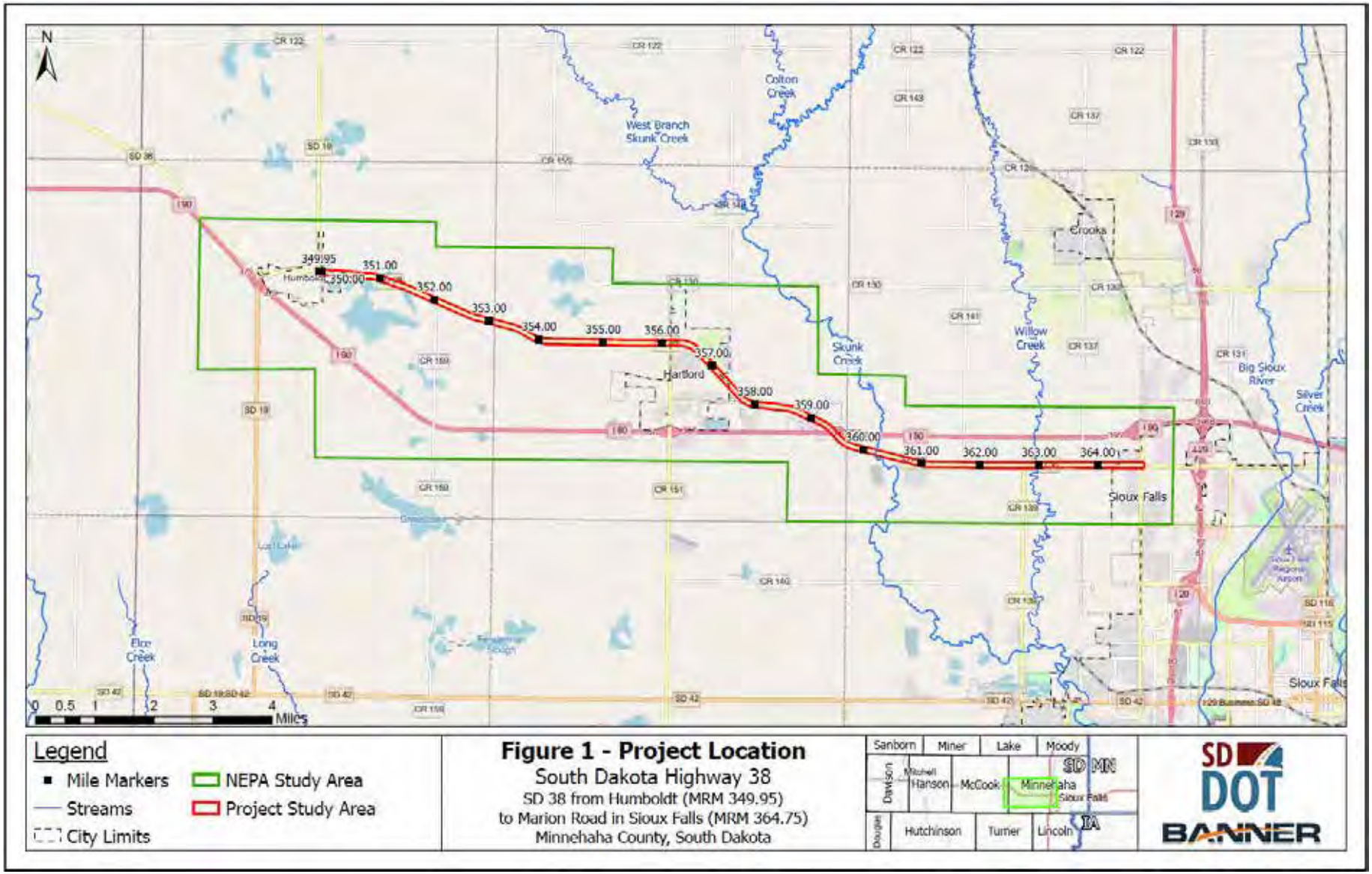
Main Line	Cross Street(s)
SD 38	SD 19 / 457th Avenue
	459th Avenue
	I-90 Speedway Entrance
	Western Avenue / 463rd Avenue
	Main Avenue
	Vandemark Avenue
	2nd Street
	West Central High School Entrance
	Railroad Street / 464th Avenue
	Mickelson Road / 260th Street
	466h Avenue (North)
	Westbound I-90 Exit 390
	Eastbound I-90 Exit 390
	466th Avenue (South)
	County Highway 141 / 468th Avenue
	County Highway 139 / 469th Avenue
	La Mesa Drive / 470th Avenue
	Marion Road

SD 38 is in a rapidly developing area and serves as a viable alternate route to I-90. Development pressure is expected to impact the SD 38 corridor with higher traffic volumes, greater demand for multi-modal (bike and pedestrian) uses, and additional access management concerns (HR Green 2023a). The eastern portion of the corridor is located within the MPO urban boundary and the growth area of the cities of Sioux Falls, Hartford, and Humboldt. Refer to **Figure 1**.

Two study areas, the NEPA Study Area and the Project Study Area, will be utilized in this screening report to analyze the indirect, direct, and cumulative effects of the proposed transportation improvements. The NEPA Study Area is larger than the Project Study Area and is utilized to analyze the indirect and cumulative effects for resources that extend geographically and are not specifically located within the Project Study Area. The Project Study Area analyzes the direct and indirect effects, allowing for a more specific look at resources such as wetlands or unique habitats that could be potentially affected. The Project Study Area is a 500-foot-wide corridor, 250 feet on either side of the centerline of SD 38. The Project Study Area is specifically utilized for indirect and direct impact analysis.

To determine the boundaries of the NEPA Study Area, traffic data, communities, resource extents, and the needs of the corridor were taken into consideration. The western boundary of the corridor was Humboldt, taking into consideration the connectivity of SD 38 to I-90. The eastern boundary incorporates the connection of SD 38 into Sioux Falls. The northern boundary includes the current and future city limit extents of Hartford and Humboldt. The southern boundary includes the extensions of the two I-90 interchanges and SD 38 entering Sioux Falls. Refer to **Figure 1**.

Figure 1. Project Location



PRELIMINARY NEEDS, PURPOSE, AND GOALS/OBJECTIVES

The Study Advisory Team, composed of FHWA, SDDOT, Minnehaha County, Humboldt, Hartford, Sioux Falls, and the Sioux Falls Metropolitan Planning Organization (MPO), is examining the need for transportation improvements along SD 38 from its intersection with SD 19 to Marion Road.

The logical termini of this study are the east intersection of SD 38 with SD 19 in Humboldt and the intersection of SD 38 with Marion Road in Sioux Falls. This Environmental Screening Report is focused on a corridor level of analysis. Although the needs identified are for the corridor, the needs can be utilized for specific transportation projects identified from this study. The sections below discuss each need that was identified further.

The overall extents of the Project Study Area are from the intersection of SD 38 with SD 19 to the intersection of SD 38 with Marion Road. Within this overall extent, four distinct segments were identified, creating logical termini for future projects. Refer to **Figure 2** in **Appendix A** for corridor segments.

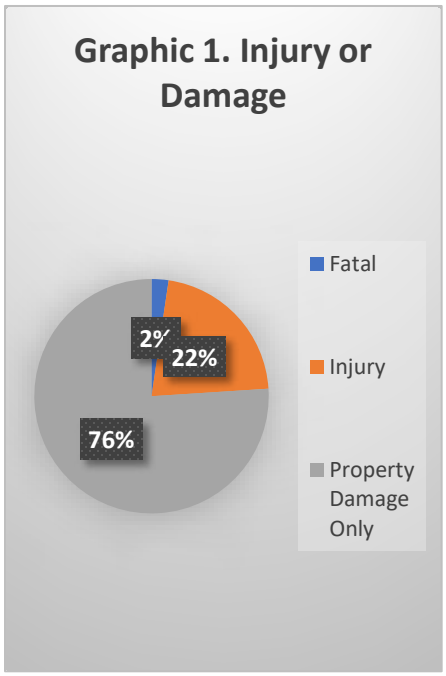
- Segment 1 extends from SD 19 to the western city limit boundary of Hartford. This is a rural segment utilized primarily by through traffic, commuting residents, and agricultural equipment. The through traffic utilizes this segment to travel between Humboldt and Hartford and to continue east or west on SD 38.
- Segment 2 extends from the western city limit boundary of Hartford to the I-90 interchange. Within Hartford, this is an urban segment with many businesses adjacent to the roadway. On the west side of Hartford, traffic transitions from a rural to urban roadway section. This segment also contains the growth area of Hartford, including the key intersections with East 2nd Street and Mickelson Road/260th Street. East 2nd Street provides access to West Central Elementary School. The West Central High School parking lot is accessed directly off SD 38 to the southeast of East 2nd Street. Students living in the residential area on the north side of SD 38 cross at this location to attend the elementary or high school. Mickelson Road is a main collector road that runs east to west on the south side of Hartford. Residential areas also have direct or indirect access to SD 38 along this segment. East of Hartford, SD 38 traverses through agricultural areas, two subdivision areas, idle ground, and wetlands associated with an unnamed tributary of Skunk Creek. This segment continues to the I-90 Exit 390 interchange.
- Segment 3 is the I-90 interchange. The interchange is currently a folded diamond configuration. The new Hartford wastewater facility is being constructed within this segment, west of the interchange and south of SD 38.
- Segment 4 extends from the I-90 interchange to Marion Road. This segment is primarily rural with agricultural uses. There is a residential subdivision southeast of the intersection of 467th Avenue and SD 38. Industrial and commercial businesses exist on the east end of the segment adjacent to Marion Road. Segment 4 ends at the intersection of SD 38 and Marion Road.

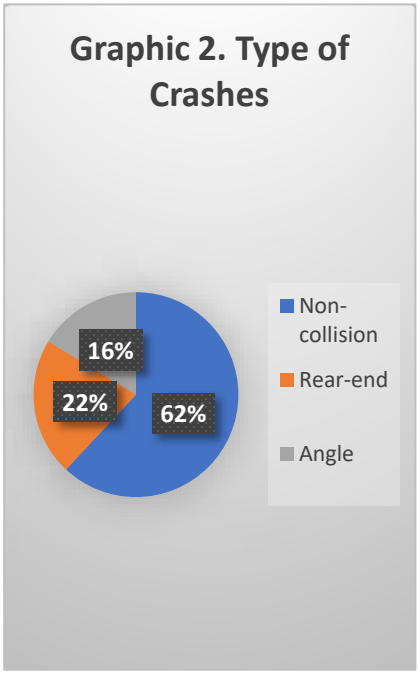
SAFETY

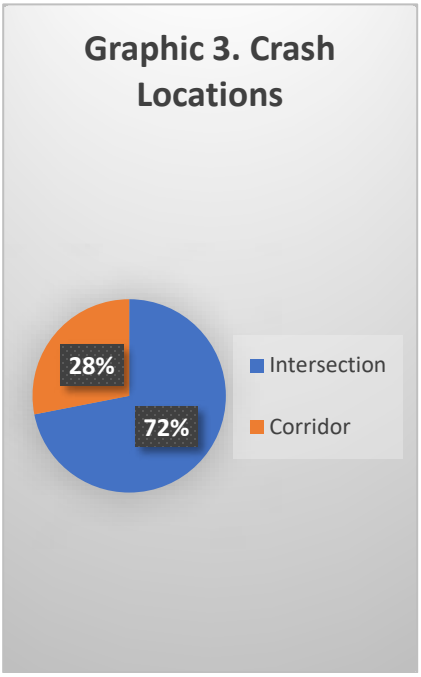
To consider safety within the Project Study Area, SDDOT provided historical crash data for the Project Study Area that were reviewed for the eighteen study intersections to determine current crash trends and/or concerns. A crash summary was completed by HR Green in March of 2023. Crashes occurred within the intersection area of influence and outside those areas within the SD 38 corridor. Crashes were analyzed for the five-year period between 2018 to 2022 (HR Green 2023a).

A total of 171 crashes occurred within the Project Study Area. Of these incidents, there were 4 fatal

incidents (2%), 37 injury incidents (22%), and 130 property damage only incidents (76%). Refer to **Graphic 1**. A majority of the crashes were classified as non-collision incidents (57%), followed by rear-end (20%) and angle incidents (15%). Refer to **Graphic 2**. The SD 38 corridor contained 123 (72%) crash incidents and the intersection areas of influence contained 48 (28%) crash incidents (HR Green 2023a). Refer to **Graphic 3.**







SD 38 and Marion Road intersection had the highest rate of crash frequency, totaling 14 (30%) of the intersection crash instances. SD 38 east of Hartford had the highest frequency of corridor crashes with 57 (46%) of the total corridor segment crash instances. The main contributing circumstances to fatal and injury crash incidents due to a driver included drinking (20%), failure to yield vehicle (17%), disregard of traffic signs or signals (13%), or some form of roadway/lane departure (20%) (HR Green 2023a).

The crash history was reviewed, and the SD 38 corridor had a weighted crash rate of 3.45. This is higher than the statewide average crash rate of 1.73 for rural minor arterials. Many crashes were the result of vehicle-animal strikes with 63 (51%) instances reported. Most intersections had lower observed crash frequency than the predicted crash frequency (HR Green 2023a). However, the intersections of SD 38 with SD 19 and Marion Road had an average five-year crash frequency that was above the predicted crash frequency.

Predictive crash analysis was completed using the Interactive Highway Safety Design Model (IHSDM) Crash Prediction analysis tool to evaluate the safety effects and predict the expected change in crashes between design year scenarios. Future year 2050 traffic forecasts utilized traffic data supplied by the Sioux Falls Metropolitan Planning Organization (SFMPO) and the SDDOT (HR Green 2023b). A predictive safety analysis of the SD 38 Project Study Area was completed for the design year 2050 No-Build scenario (HR Green 2023b). Along the SD 38 segments, there were a several intersections and highway segments that produced a high number of crash incidents that indicated a need for potential safety improvements (HR Green 2023b).

The traffic safety analysis indicated that the following intersections and highway segments should be investigated for future safety improvements:

- SD 38 & Western Avenue/463rd Avenue,
- SD 38 & Main Avenue,
- SD 38 & 2nd Street,
- SD 38 & Railroad Street/464th Avenue,
- SD 38 & Mickelson Road/260th Street,
- SD 38 & Marion Road,
- SD 38 segment between 459th Street and Western Avenue/463rd Avenue,
- SD 38 segment between Mickelson Road/260th Street and 466th Avenue (North), and
- SD 38 segment between 466th Avenue (South) and La Mesa Drive/470th Avenue.

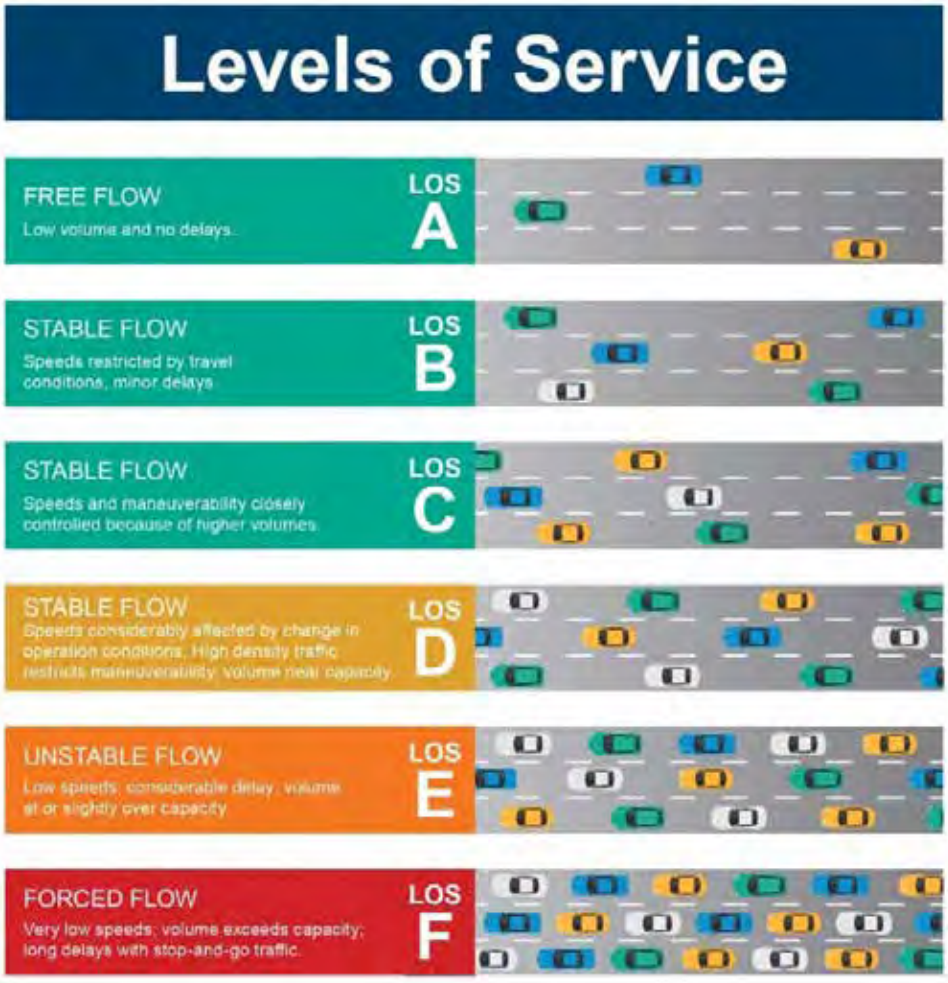
TRAFFIC CAPACITY

Existing Conditions

The SD 38 Corridor Study, Existing Traffic and Operations Analysis included an assessment of existing traffic volume data at eighteen intersections along the Project Study Area. Traffic volume data were collected on November 2, 2022, for a 12-hour period (7:00 AM to 7:00 PM) (HR Green 2023a). A review of the traffic volume data revealed distinct AM and PM peak hour periods occurring between 7:15 to 8:15 AM and 4:45 to 5:45 PM.

Intersection Level of Service (LOS) is primarily a function of peak hour turning movement volumes, intersection lane configuration, and traffic control. For intersection analysis, the Highway Capacity Manual (HCM) defines LOS in terms of the average control delay at the intersection in seconds per vehicle. Two-lane highway LOS is primarily a function of the roadway configuration, vehicle speeds, and availability of passing opportunities. For two-lane highway analysis, the HCM defines LOS in terms of the following density or the number of vehicles in a follower state per mile per lane. The results of a HCM analysis are typically presented in the form of a letter grade (A-F) that provides a qualitative estimate of the operational efficiency or effectiveness of the corridor. Much like an academic report card, LOS A represents the best range of operating conditions (i.e., motorists experiencing little delay or congestion) and LOS F represents the worst (i.e., extreme delay or severe congestion). The study utilized Level of Service (LOS) to categorize traffic flow, generally during peak (work congestion) traffic periods. Refer to **Graphic 4**.

GRAPHIC 4. Level of Service



Following SDDOT guidance, LOS C is the desired minimum traffic operational goal for intersections in rural environments while LOS D is an acceptable operational goal for intersections in dense urban environments. Under the existing conditions, the traffic operations analysis showed acceptable operations at all intersections within the Project Study Area, with intersections achieving LOS B or greater during both AM and PM peak hours. The exception was the SD 38 and La Mesa Drive/470th Avenue intersection which produced a LOS C during PM Peak Hour (HR Green 2023a).

Under the existing conditions, the traffic operations analysis showed acceptable operations along the corridors within the Project Study Area, with many segments achieving LOS B or greater during both the AM and PM peak hours. The exception was an approximately 960-foot segment of westbound SD 38 located west of Mickelson Road / 260th Street which produced a LOS C during the PM peak hour (HR Green 2023a).

In general, the existing condition traffic operations demonstrated acceptable performance measures throughout all intersections and highway segments within the Project Study Area. The desired LOS was realized for all intersections and highway segments during the AM and PM peak hours (HR Green 2023a).

Future Conditions

In order to evaluate the future traffic conditions, the 2050 ADT volumes were collected from the SFMPO

Traffic Demand Model (TDM). These forecasted volumes accounted for localized traffic growth, changes in traffic patterns, and planned roadway improvements. To determine the traffic growth within the study area and estimate 2050 peak hour volumes, the 2018 base year ADT was referenced from the TDM. Additionally, the future ADT was acquired from available SDDOT GIS data to account for portions of SD 38 that were outside of the TDM boundaries. Available development site plans were sourced and any planned development trips that have not been included in the TDM were incorporated into the future year forecasted volumes.

The initial year of 2029 was analyzed for future conditions. **Table 2** shows the results of the future traffic conditions analysis for 2029.

Table 2. Traffic Intersection Operations for Initial Year 2029

ID #	SD 38 Cross Street(s)	AM PEAK HOUR		PM PEAK HOUR	
		Delay	LOS	Delay	LOS
1	SD 19 / 457th Avenue	10.4	B	10.5	B
2	459th Avenue	10.4	B	11.8	B
3	I-90 Speedway Entrance	0.0	A	0.0	A
4	Western Avenue / 463rd Avenue	13.5	B	16.5	C
5	Main Avenue	12.0	B	15.2	C
6	Vandemark Avenue	12.6	B	12.7	B
7	2nd Street	16.6	C	18.5	C
8	West Central High School Entrance	13.5	B	13.2	B
9	Railroad Street / 464th Avenue	18.2	C	19.8	C
10	Mickelson Road / 260th Street	24.8	C	54.5	F
11	466th Avenue (North)	19.5	C	20.3	C
12	Westbound (WB) I-90 Exit 390	11.5	B	17.7	C
13	Eastbound (EB) I-90 Exit 390	12.3	B	15.4	C
14	466th Avenue (South)	11.9	B	12.3	B
15	County 141 / 468th Avenue	13.5	B	14.5	B
16	County 139 / 469th Avenue	14.2	B	18.5	C
17	La Mesa Drive / 470th Avenue	17.0	C	21.7	C
18	Marion Road	16.2	B	20.6	C

Under the 2029 conditions, the traffic operations analysis showed acceptable operations at the majority of intersections within the Project Study Area, with intersections achieving LOS C or greater during both the AM and PM peak hours. The SD38 and Mickelson Road/260th Street intersection received a LOS F during PM peak hour which can be attributed to the additional development traffic at this intersection.

Interim year 2040 traffic operations analysis used future year traffic volumes and posted travel volumes and posted travel speeds. The SD 38 and Mickelson Road/260th Street Intersection was analyzed under traffic signal control. The results of the interim year 2040 intersection capacity analysis can be viewed in **Table 3**.

Table 3. Traffic Intersection Operations for Interim Year 2040

ID #	SD 38 Cross Street(s)	AM PEAK HOUR		PM PEAK HOUR	
		Delay	LOS	Delay	LOS
1	SD Highway 19 / 457th Avenue	11.1	B	11.2	B
2	459th Avenue	10.9	B	12.4	B
3	I-90 Speedway Entrance	0.0	A	0.0	A
4	Western Avenue / 463rd Avenue	15.9	C	23.2	C
5	Main Avenue	13.1	B	19.0	C
6	Vandemark Avenue	13.6	B	14.6	B
7	2nd Street	21.2	C	25.6	D
8	West Central High School Entrance	13.5	B	13.2	B
9	Railroad Street / 464th Avenue	25.5	D	26.4	D
10	Mickelson Road / 260th Street	30.1	C	29.6	C
11	466th Avenue (North)	24.6	C	25.0	C
12	WB I-90 Exit 390	13.1	B	27.0	D
13	EB I-90 Exit 390	14.4	B	21.1	C
14	466th Avenue (South)	12.6	B	13.6	B
15	County Highway 141 / 468th Avenue	14.8	B	17.2	C
16	County Highway 139 / 469th Avenue	18.4	C	31.4	D
17	La Mesa Drive / 470th Avenue	23.3	C	33.0	D
18	Marion Road	17.2	B	26.5	C

Under the interim year 2040 conditions, the traffic operations analysis showed acceptable operations at the majority of the intersections within the Study Area, within the intersections achieving LOS C or greater during both the AM and PM peak hours. The five study intersections of SD 38 with 2nd Street, Railroad Street/464th Avenue, WB I-90, County 139/469th Avenue, and La Mesa Drive/470th Avenue produced an LOS D in at least one peak hour, which does not meet the LOS goal established by SDDOT.

The highway segments were also analyzed and met the LOS goals throughout the Study Area for all peak hours.

Design Year 2050 traffic operations analysis used future year traffic volumes and posted travel speeds. The SD 38 and Mickelson Road/260th Street intersection was analysed under traffic signal control. The results of the Design Year 2050 intersection capacity analysis can be viewed in **Table 4**.

Table 4. Traffic Intersection Operations for Interim Year 2050

ID #	SD 38 Cross Street(s)	AM PEAK HOUR		PM PEAK HOUR	
		Delay	LOS	Delay	LOS
1	SD Highway 19 / 457th Avenue	12.2	B	12.3	B
2	459th Avenue	11.6	B	13.5	B
3	I-90 Speedway Entrance	0.0	A	0.0	A
4	Western Avenue / 463rd Avenue	21.5	C	46.5	E
5	Main Avenue	14.4	B	25.5	D
6	Vandemark Avenue	15.4	C	16.8	C
7	2nd Street	31.1	D	38.3	E
8	West Central High School Entrance	15.4	C	14.8	B
9	Railroad Street / 464th Avenue	41.9	E	43.8	E
10	Mickelson Road / 260th Street	19.2	B	21.3	C
11	466th Avenue (North)	31.6	D	31.4	D
12	WB I-90 Exit 390	14.9	B	66.1	F
13	EB I-90 Exit 390	18.4	C	30.0	D
14	466th Avenue (South)	13.9	B	15.7	C
15	County Highway 141 / 468th Avenue	16.7	C	21.3	C
16	County Highway 139 / 469th Avenue	30.9	D	106.2	F
17	La Mesa Drive / 470th Avenue	39.2	E	81.5	F
18	Marion Road	19.1	B	32.1	C

Under the Design Year 2050 conditions, the traffic operations analysis showed potential capacity constraints and inefficiencies at many intersections within the study area. Nine study intersections of SD 38, including Western Avenue/463rd Avenue, Main Avenue, 2nd Street, Railroad Street/464th Avenue, 466th Avenue (North), WB I-90, EB I-90, County 139/469th Avenue, and La Mesa Drive/470th Avenue, produced an LOS D or worse during at least one peak hour, which does not meet the LOS goal established by the SDDOT.

The results of the highway segment capacity analysis are shown in **Tables 5 and 6.**

Table 5. Traffic Highway Operations for Design Year 2050, Eastbound SD 38

ID #	Segment Type	AM PEAK HOUR		PM PEAK HOUR	
		Density	LOS	Density	LOS
SD 38 Eastbound					
EB 18	Passing Zone	8.1	D	3.3	B
EB 19	Passing Constrained	7.9	C	3.1	B
EB 20	Passing Constrained	8.3	D	3.4	B
EB 21	Passing Constrained	9.2	D	4.2	C
EB 33	Passing Constrained	8.2	D	2.9	B

Table 6. Traffic Highway Operations for Design Year 2050, Westbound SD 38

ID #	Segment Type	AM PEAK HOUR		PM PEAK HOUR	
		Density	LOS	Density	LOS
SD 38 Westbound					
WB 1	Passing Constrained	1.6	A	8.7	D
WB 2	Passing Zone	1.5	A	8.5	D
WB 16	Passing Constrained	3.3	B	10.9	D
WB 17	Passing Constrained	3.0	B	10.5	D
WB 18	Passing Constrained	3.2	B	10.8	D
WB 19	Passing Zone	3.1	B	10.7	D
WB 20	Passing Constrained	3.2	B	10.8	D
WB 21	Passing Constrained	3.3	B	8.7	D

Under the Design Year 2050 conditions, the traffic operations analysis showed potential capacity constraints at the segments noted in the above tables. There were four eastbound segments and eight westbound segments that resulted in LOS D during at least one of the peak hours. The segments represent areas of focus for potential capacity improvements.

Overall, the Design Year 2050 condition traffic operations demonstrated the areas within the study limits that could benefit most from potential improvements. The desired LOS was realized for the majority of intersections and highway segments during the AM and PM peak hours but there were notable exceptions that did not meet the LOS criteria goals. The recognition of issues at these locations will be used to guide future concepts.

To determine if the proposed alternatives would meet the need for traffic capacity, the following is the criterion that will be used:

- Does the alternative reduce the number of crashes in the SD 38 corridor?
- Does the alternative maintain or improve the intersections of SD 38 to an acceptable LOS level by the planning year noted?
- Does the alternative maintain or improve the eastbound and westbound traffic of SD 38 to an acceptable LOS level by the planning year noted?
- Does the alternative maintain or improve the I-90 Exit 390 Interchange to an acceptable LOS level by the planning year noted?

SUMMARY OF PURPOSE AND NEED FOR THE CORRIDOR STUDY

The Project Study Area of SD 38 is predominantly a rural two-lane highway located in a rapidly developing area that serves as a viable alternate route to I-90. Development pressure is expected to impact the SD 38 corridor with higher traffic volumes, greater demand for multi-modal (bike and pedestrian) uses, and additional access management concerns. In addition, segments of the SD 38 corridor are expected to need major rehabilitation or reconstruction within the next 10 to 15 years. The primary purpose of the corridor study is to identify existing environmental conditions and anticipated problem areas for future construction activities that will reconstruct the roadway to meet future traffic volume demands.

RANGE OF ALTERNATIVES

Five alternatives, including a no-build alternative, were identified to address the needs along the Project corridor. Three of the five alternatives include improvements to the SD 38 mainline corridor and one of the five alternatives provides multiple options that could occur at the I-90 Exit 390 Interchange over SD 38.

- **No-Build Alternative**
- **Alternative 1** – Mainline Corridor Improvements
    - Humboldt to Hartford: 2 lanes with turn lanes as needed
    - Hartford to Railroad Street: 3 lanes
    - Railroad Street to I-90: 5 lanes
    - I-90 to Tea/Ellis Road (469th St): 2 lanes
    - Tea/Ellis Road (469th St) to Sioux Falls: 5 lanes
- **Alternative 2** – Mainline Corridor Improvements
    - Humboldt to Hartford: 2 lanes with turn lanes as needed
    - Hartford to Railroad Street: 3 lanes
    - Railroad Street to I-90: 5 lanes
    - I-90 to Sioux Falls: 4 lanes with raised median
- **Alternative 3** – Mainline Corridor Improvements
    - Humboldt to Hartford: 2 lanes with turn lanes as needed
    - Hartford to Railroad Street: 3 lanes
    - Railroad Street to Sioux Falls: 4 lanes with raised median
- **I-90 Exit 390 Interchange Options**
    - Option 1: Folded Diamond - match existing SD 38 Alignment
    - Option 2: Folded Diamond – 65 Degree Skew (50 mph - SD 38)
    - Option 3: Folded Diamond – 75 Degree Skew (50 mph – SD 38)
    - Option 3.2: Folded Diamond – 75 Degree Skew (50 mph – SD 38)
    - Option 4: ¾ Standard Diamond
    - Option 5: Standard Diamond Interchange
    - Option 6a: Folded Diamond Interchange with Roundabouts – 75 Degree Skew
    - Option 6b: Folded Diamond Interchange with Roundabouts – Existing Alignment
    - Option 7: Standard Diamond Interchange – Shifted East
    - Option 8: Single Point Urban Interchange (SPUI)
    - Option 9: Diverging Diamond Interchange (DDI)
    - Option 10: Tight Urban Diamond Interchange

A screening process was completed that focused on the purpose and need criterion. The purpose and need screening criterion were the following:

- Does the alternative reduce the number of crashes in the SD 38 corridor?
- Does the alternative maintain or improve the intersections of SD 38 to an acceptable LOS level by the planning year noted?
- Does the alternative maintain or improve the eastbound and westbound traffic of SD 38 to an acceptable LOS level by the planning year noted?
- Does the alternative maintain or improve the I-90 Exit 390 Interchange to an acceptable LOS level by the planning year noted?

No Build Alternative

The No Build Alternative includes only maintenance activities for the current SD 38 corridor. No improvements along the SD 38 mainline corridor or to the I-90 Exit 390 Interchange would occur. Additionally, improvements through Hartford, Humboldt, and Sioux Falls would not occur. The No Build Alternative would not meet the needs (traffic capacity and safety, and roadway condition) identified for the study.

Although the No Build Alternative does not meet the design criteria or the purpose and need, it will be carried forward as a baseline for comparing potential impacts of the build alternatives.

Alternatives that do not meet the preliminary purpose and need screening criterion have been discarded from further consideration and include Alternative 1 and Alternative 2. Alternative 1 and Alternative 2 are briefly discussed below; no figures for these alternatives have been included in this document.

Alternative 1 – Mainline Corridor Improvements

Improvements are proposed at the intersections of SD 19/457th Avenue, 258th Street, 459th Avenue, 460th Avenue, the I-90 Speedway entrance, 259th Street, 461st Avenue, 462nd Avenue, Western Avenue/463rd Avenue, Oaks Avenue, N Main Avenue, Mundt Avenue/9th Street, N Vandemark Avenue, Elm Road, East 2nd Street, West Central High School Entrance, Railroad Street/464th Avenue, 260th Street/N Maple Avenue, 456th Avenue, Kloxin Drive, Middle Drive, Boggs Circle, 466th Avenue, 467th Avenue, 261st Street, Dorothy Drive, County Highway 141/468th Avenue, Pheasant Run Avenue, County Highway 139/469th Avenue, and La Mesa Drive/ 470th Avenue. The intersection improvements include either signage for turning movements, stoplights, turn lanes, access reconfigurations that allow for more perpendicular entrances onto SD 38, or a combination thereof.

Mainline corridor improvements under Alternative 1 are divided into five separate segments along the corridor, Humboldt to Hartford, Hartford to Railroad Street, Railroad Street to I-90, I-90 to Tea/Ellis Road (469th Street), and Tea Ellis Road (469th Street) to Sioux Falls. The Alternative 1 mainline corridor improvement from Humboldt to Hartford includes two lanes with turn lanes as needed. From Hartford to Railroad Street, improvements include a three-lane configuration with a center turn lane. East of Railroad Street, SD 38 transitions to a five-lane configuration to the I-90 intersection. Improvements from I-90 to Tea/Ellis Road (469th Street) include a two-lane configuration up to the Tea/Ellis Road (469th Street). From the Tea/Ellis Road (469th Street), SD 38 would transition to a five-lane configuration with a center turn lane.

Other improvements under Alternative 1 not associated with a roadway intersection include, but are not limited to, modification of roadway field approaches and residential approaches as needed, the addition

of lanes for through traffic, and the addition of turn lanes for entering onto and exiting from SD 38. Additionally, realignment will occur to the pedestrian path along the north side of SD 38 east of Hartford.

An additional option for Alternative 1 includes an improvement to the I-90 Speedway entrance. The entrance for the I-90 Speedway would be located approximately 500 feet east of the original entrance to allow for a more perpendicular entrance onto SD 38. The improvement would include east bound and west bound turn lanes to exit SD 38 onto the I-90 Speedway Entrance.

Due to Alternative 1 being eliminated from consideration, figures for Alternative 1 were not included in this document.

Alternative 1 has been eliminated from further consideration due to inconsistency in roadway section (5-lane to a 2-lane east of I-90, then back to a 5-lane from Tea/Ellis Road to Marion Road), driver expectancy concerns, and a reduction/lack of access control without a raised median within the rapidly growing areas of Hartford and Sioux Falls.

Alternative 2 – Mainline Corridor Improvements

Improvements are proposed at the intersections of SD 19/457th Avenue, 258th Street, 459th Avenue, 460th Avenue, the I-90 Speedway entrance, 259th Street, 461st Avenue, 462nd Avenue, Western Avenue/463rd Avenue, Oaks Avenue, N Main Avenue, Mundt Avenue/9th Street, N Vandemark Avenue, Elm Road, East 2nd Street, West Central High School Entrance, Railroad Street/464th Avenue, 260th Street/N Maple Avenue, 456th Avenue, Kloxin Drive, Middle Drive, Boggs Circle, 466th Avenue, 467th Avenue, 261st Street, Dorothy Drive, County Highway 141/468th Avenue, Pheasant Run Avenue, County Highway 139/469th Avenue, and La Mesa Drive/ 470th Avenue. The intersection improvements include either signage for turning movements, stoplights, turn lanes, reconfigurations that allow for more perpendicular entrances onto SD 38, or a combination thereof.

Mainline corridor improvements under Alternative 2 are divided into four separate segments along the corridor, Humboldt to Hartford, Hartford to Railroad Street, Railroad Street to I-90, and I-90 to Sioux Falls. The Alternative 2 mainline corridor improvement from Humboldt to Hartford includes a two-lane configuration with turn lanes as needed. From Hartford to Railroad Street, improvements include a three-lane configuration, including a center turn lane. East of Railroad Street to I-90 includes a five-lane configuration with a center turn lane. From east of I-90 to Sioux Falls, improvements include a four-lane configuration with a raised median.

Other improvements under Alternative 2 not associated with a roadway intersection include, but are not limited to, modification of roadway field approaches and residential approaches as needed, the addition of lanes for through traffic, and the addition of turn lanes for entering onto and exiting from SD 38. Additionally, realignment will occur to the pedestrian path along the north side of SD 38 east of Hartford.

An additional option for Alternative 2 includes an improvement to the I-90 Speedway entrance. The entrance for the I-90 Speedway would be located approximately 500 feet east of the original entrance to allow for a more perpendicular entrance onto SD 38. The improvement would include east bound and west bound turn lanes to exit SD 38 onto the I-90 Speedway Entrance.

Due to Alternative 2 being eliminated from consideration, figures for Alternative 2 were not included in this document.

Alternative 2 has been eliminated from further consideration due to reduced/lack of access control

without a raised median within the rapidly growing Hartford area.

Alternative 3 meets the screening criterion and is further discussed below.

Alternative 3 – Mainline Corridor Improvements

Improvements are proposed at the intersections of SD 19/457th Avenue, 258th Street, 459th Avenue, 460th Avenue, the I-90 Speedway entrance, 259th Street, 461st Avenue, 462nd Avenue, Western Avenue/463rd Avenue, Oaks Avenue, N Main Avenue, Mundt Avenue/9th Street, N Vandemark Avenue, Elm Road, East 2nd Street, West Central High School Entrance, Railroad Street/464th Avenue, 260th Street/N Maple Avenue, 456th Avenue, Kloxin Drive, Middle Drive, Boggs Circle, 466th Avenue, 467th Avenue, 261st Street, Dorothy Drive, County Highway 141/468th Avenue, Pheasant Run Avenue, County Highway 139/469th Avenue, and La Mesa Drive/ 470th Avenue. The intersection improvements include either signage for turning movements, stoplights, turn lanes, reconfigurations that allow for more perpendicular entrances onto SD 38, or a combination thereof. Refer to **Figure 3** in **Appendix A** for Alternative 3 Mainline Corridor Improvements.

Mainline corridor improvements under Alternative 3 are divided into three separate segments, Humboldt to Hartford, Hartford to Railroad Street, and Railroad Street to Sioux Falls. The Alternative 3 mainline corridor improvement from Humboldt to Hartford includes a two-lane configuration with turn lanes as needed. From Hartford to Railroad Street, improvements include a three-lane configuration including a center turn lane. From east of Railroad Street to Sioux Falls, improvements include a four-lane with a raised median which is consistent with the City of Sioux Falls design standard.

Other improvements under Alternative 3 not associated with a roadway intersection include, but are not limited to, modification of roadway field approaches and residential approaches as needed, the addition of lanes for through traffic, and the addition of turn lanes for entering onto and exiting from SD 38. Additionally, realignment will occur to the pedestrian path along the north side of SD 38 east of Hartford.

An additional option for Alternative 3 includes an improvement to the I-90 Speedway entrance. The entrance for the I-90 Speedway would be located approximately 500 feet east of the original entrance to allow for a more perpendicular entrance onto SD 38. The improvement would include east bound and west bound turn lanes to exit SD 38 onto the I-90 Speedway Entrance.

Alternative 3 meets the purpose and need criterion for the corridor and is pulled forward for consideration as the preferred SD 38 mainline corridor improvement.

I-90 Exit 390 Interchange Options

The options considered for the I-90 Exit 390 Interchange will be configured to typical interchanges that allow for traffic to enter or exit the SD 38 and I-90 transportation corridors. An Interchange Modification Justification Report (IMJR) will be completed for this segment of the corridor. An IMJR is a planning document prepared to gain approval from the FHWA to modify an existing interstate interchange. Numerous configurations for the interchange were presented for evaluation, however, a preferred improvement for I-90 Exit 390 was not selected during this environmental screening. Figures for the options that have been considered up to this point are included in **Figure 4** in **Appendix A**.

Options 1, 2, 3, 4, 5, and 7 for the interchange configuration were determined to not meet the purpose and need for the project and have been eliminated from consideration. Those options are discussed below.

Option 1: Folded Diamond – Match Existing SD 38 Alignment

The alignment of SD 38 would remain the same east and west of the I-90 Exit 390 interchange. The access road located on 466th Avenue off of SD 38 to a commercial business, Goos RV, would be moved west along SD 38. The new alignment would cross an unnamed tributary of Skunk Creek two times and would require the construction of a new access road to the east of the subdivision. The curves and lengths of the interchange ramps would be slightly adjusted to allow for safer entry and exit throughout the interchange. Impacts to a commercial business, Goos RV, would also occur on the southwest corner of the business where a new west-bound I-90 ramp would be constructed. South of I-90, 466th Avenue would be moved west to allow for a perpendicular intersection onto SD 38. 466th Avenue aligns with the eastbound interchange ramps to SD 38. The access along 466th Avenue to a commercial business, Cemcast Pipe and Precast, would be re-routed to the west onto private land. An access road to the Hartford Wastewater Treatment Facility would be routed to access 466th Avenue South of I-90 and SD 38. Refer to **Interchange Option 1**.

Option 2: Folded Diamond – 65 Degree Skew (50 mph – SD 38)

The alignment of SD 38 would be placed at a 65 degree skew to I-90. The access road located on 466th Avenue off SD 38 to a commercial business, Goos RV, would be moved north along the new SD 38 alignment. Curves of interchange ramps would be adjusted to allow for a safter entry and exit throughout the interchange. South of I-90, the 466th Avenue intersection with SD 38 would be moved west to allow for a perpendicular intersection onto SD 38. 466th Avenue would align with the eastbound onramp and offramp to SD 38. The access along 466th Avenue to a commercial business, Cemcast Pipe and Precast, would be re-routed to the west onto private land. An access road to the Hartford Wastewater Treatment Facility would be routed to access 466th Avenue South of I-90 and SD 38. Refer to **Interchange Option 2**.

Option 3: Folded Diamond – 75 Degree Skew (50 mph – SD 38)

The alignment of SD 38 would be placed at a 75 degree skew to I-90. The access road located on 466th Avenue off SD 38 to a commercial business, Goos RV, would be moved north and west along the skewed SD 38 alignment. The curves and lengths of interchange ramps would be adjusted to allow for a safter entry and exit throughout the interchange. South of I-90, the 466th Avenue intersection with SD 38 would be moved west to allow for a perpendicular intersection onto SD 38. 466th Avenue would align with the eastbound interchange ramps to SD 38. The access along 466th Avenue to a commercial business, Cemcast Pipe and Precast, would be re-routed to the west onto private land. An access road to the Hartford Wastewater Treatment Facility would be routed to access 466th Avenue South of I-90 and SD 38. Refer to **Interchange Option 3**.

Option 4: ¾ Standard Diamond

The alignment of SD 38 would be placed at a 75 degree skew to I-90. The access road located on 466th Avenue off SD 38 to a commercial business, Goos RV, would be moved north and west along SD 38 alignment. The westbound onramp would be moved west of SD 38 to enter I-90 and the westbound exit ramp would be moved west to align with the onramp to I-90. The I-90 eastbound interchange ramps curves and lengths would be improved to allow for a safter entry and exit throughout the interchange. South of I-90, the 466th Avenue intersection with SD 38 would be moved west to allow for a perpendicular intersection onto SD 38. 466th Avenue would be realigned to intersect with the eastbound interchange ramps. An access road to the Hartford Wastewater Treatment Facility would be routed to access 466th Avenue South of I-90 and SD 38. Refer to **Interchange Option 4**.

Option 5: Standard Diamond Interchange

The SD 38 alignment would be placed at a 75 degree skew to I-90. . The access road on 466th Avenue off SD 38 to a commercial business, Goose RV, would be moved north and west along SD 38. The westbound onramp and eastbound offramp would be moved west of SD 38 to create the standard diamond interchange configuration. The westbound offramp and eastbound onramp would be configured to the standard diamond interchange. South of I-90, 466th Avenue would intersect along its original alignment and the Hartford Wastewater Treatment Facility access road would route to south of SD 38 to intersect with 466th Avenue. Refer to **Interchange Option 5**.

Option 7: Standard Diamond Interchange Shifted East

The alignment of SD 38 would be placed at a 75 degree skew to I-90 and shifted east.. The access road on 466th Avenue off SD 38 to a commercial business, Goose RV, would be moved north and west along SD 38. The westbound onramp and eastbound offramp of I-90 would be moved west of SD 38 to create the standard diamond interchange configuration. The westbound offramp and eastbound onramp would be configured to the standard diamond interchange. South of I-90, 466th Avenue would intersect slightly east of its original alignment for a perpendicular entry and exit to SD 38. The Hartford Wastewater Treatment Facility access road would route south of SD 38 to intersect with 466th Avenue. Refer to **Interchange Option 7**.

Options 1, 2, 3, 4, 5, and 7 have significant resource impacts include impacts to businesses, residences, and the Hartford Wastewater Treatment Facility and have been further eliminated from consideration.

Interchange configuration Options 3.2, 6, 8, 9, and 10 met the screening criterion and are further discussed below.

Option 3.2: Folded Diamond – 75 Degree Skew (50 mph – SD 38)

The alignment of SD 38 would be placed at a 75 degree skew to I-90. The access road located on 466th Avenue off SD 38 to a commercial business, Goos RV, would be moved north and west along the skewed SD 38 alignment. The curves and lengths of interchange ramps would be adjusted to allow for a safter entry and exit throughout the interchange. South of I-90, the 466th Avenue intersection with SD 38 would be moved east of the current intersection onto SD 38. The new 466th Avenue intersection with SD 38 would route through a business, ANCO Underground LLC. An access road to the Hartford Wastewater Treatment Facility would be routed to access 466th Avenue South of I-90 and SD 38. Refer to **Interchange Option 3.2**.

Option 6a: Folded Diamond Interchange with Roundabouts – 75 Degree Skew

The alignment of SD 38 would be placed at a 75 degree skew to I-90. The curves and lengths of the interchange ramps would be adjusted to allow for a safter entry and exit throughout the interchange. Roundabouts would be placed in two locations where SD 38 intersects with the interchange ramps. The access road located on 466th Avenue off SD 38 to a commercial business, Goos RV, would be moved north and west along SD 38. South of I-90, 466th Avenue would intersect west of its original alignment. The Hartford Wastewater Treatment Facility access road would intersect with 466th Avenue southwest of the roundabout. Refer to **Interchange Option 6a**.

Option 6b: Folded Diamond Interchange with Roundabouts – Existing Alignment

The alignment of SD 38 would stay along the existing alignment. The curves and lengths of the

interchange ramps would be slightly adjusted to allow for a safter entry and exit throughout the interchange. Roundabouts would generally be placed in the locations where SD 38 currently intersects with the interchange ramps; the western-most roundabout would be placed slightly west of the current interchange ramp. The access road located on 466th Avenue off SD 38 to a commercial business, Goos RV, would be moved north and west along SD 38. South of I-90, 466th Avenue would intersect west of its original alignment and in-line with the roundabout. The Hartford Wastewater Treatment Facility access road would intersect with 466th Avenue southwest of the roundabout. Refer to **Interchange Option 6b**.

Option 8: Single Point Urban Interchange (SPUI)

The alignment of SD 38 would be placed at a 75 degree skew to I-90. The access road on 466th Avenue off SD 38 to a commercial business, Goose RV, would be moved north and west along SD 38. The westbound onramp and eastbound offramp of I-90 would be moved west of SD 38 to create a single point urban interchange. The westbound offramp and eastbound onramp would be configured to a single point urban interchange. South of I-90, 466th Avenue would intersect along its original alignment for a perpendicular entry and exit to SD 38. The Hartford Wastewater Treatment Facility access road would route south of SD 38 to intersect with 466th Avenue. Refer to **Interchange Option 8**.

Option 9: Diverging Diamond Interchange (DDI)

The alignment of SD 38 would be placed at a 75 degree skew to I-90. The access road on 466th Avenue off SD 38 to a commercial business, Goose RV, would be moved north and east along SD 38. The westbound onramp and eastbound offramp of I-90 would be moved west of SD 38 to create a diverging diamond interchange. The westbound offramp and eastbound onramp would be configured to a diverging diamond interchange. South of I-90, 466th Avenue would intersect just east of its alignment for a perpendicular entry and exit to SD 38. The Hartford Wastewater Treatment Facility access road would route south of SD 38 to intersect with 466th Avenue. Refer to **Interchange Option 9**.

Option 10: Tight Urban Diamond Interchange

The alignment of SD 38 would be placed at a 75 degree skew to I-90. The access road on 466th Avenue off SD 38 to a commercial business, Goos RV, would remain in approximately the same location and utilize the existing access road. The terminal intersection of the westbound on-ramp and eastbound off-ramp of I-90 would be moved east of the current SD 38 alignment to create a tight urban diamond interchange, with the ramps themselves shifting slightly north of the I-90 alignment. The terminal intersection of the westbound off-ramp and eastbound on-ramp would stay on the current SD 38 alignment and configured to a tight urban diamond interchange, with the ramps themselves shifting slightly south of the I-90 alignment. South of I-90, 466th Avenue would intersect just south of its current alignment for a perpendicular entry and exit to SD 38. The Hartford Wastewater Treatment Facility access road would route south of the new SD 38 alignment to intersect with 466th Avenue. Refer to **Interchange Option 10**.

Options 3.2, 6a, 6b, 8, 9, and 10 are alternatives coming forward from the design team and the SAT, but one preferred alternative has not been selected. Additional interchange configurations may also be presented during the IMJR process.

ENVIRONMENTAL RESOURCES AND ISSUES

This section will identify the resources or issues that will be integral for NEPA documentation with future projects. For a photo log completed during the field reconnaissance and an overview figure of the SD 38 corridor, refer to **Appendix B**.

WATER RESOURCES, INCLUDING WATERS OF THE U.S., WATERS OF THE STATE, WETLANDS, STORM WATER, AND FLOODPLAINS

All waters in South Dakota are considered Waters of the State. According to the federal Clean Water Act (CWA), Waters of the United States (U.S.) are a subset of waters of the state that are also regulated by the federal government. Waters are regulated under the CWA in one or more of the following ways:

(1) Obtain a permit for placement of dredge or fill material in Waters of the U.S. from the United States Army Corps of Engineers (USACE) (Section 404 of the CWA),
(2) Obtain a Surface Water Discharge permit for the discharge of pollutants from point sources into Waters of the State from the South Dakota Department of Agriculture and Natural Resources (SDANR) or a National Pollutant Discharge Elimination System (NPDES) permit for projects impacting tribal lands from the U.S. Environmental Protection Agency for discharges to Waters of the U.S. (Section 402 of the CWA), and
(3) For federally issued permits, obtain water quality certification from the SDDANR, or for projects impacting tribal lands, from the EPA (Section 401 of the CWA).

All projects should also be developed consistent with the state nonpoint source pollution management program (Section 319).

Water resources that are considered “jurisdictional” under the CWA are subject to the multiple federal regulatory requirements set forth with Section 404 of the CWA. The CWA additionally requires that each state develop standards for their waters of the state to ensure the beneficial uses are protected. South Dakota has developed surface water quality standards for all Waters of the State. If water resources are determined to be non-jurisdictional as Waters of the U.S., the state’s regulatory requirements for Waters of the State must still be met. The environmental analysis of aquatic resources encompasses many types of resources that may be encountered in the planning, construction, and maintenance of transportation projects.

Methodology

A windshield survey identified water resources, wetlands, streams, and open water features within the Project Study Area. To provide approximate boundaries of these identified water resources, a desktop delineation was conducted. The watersheds, specifically the 8-digit Hydrologic Unit Code (HUC), were identified by the NEPA Study Area level to consider potential direct, indirect, and cumulative effects to aquatic resources.

The Federal Emergency Management Agency (FEMA) Flood Map Service Center was reviewed online for designated floodplains occurring in the Project Study Area (FEMA 2022). A Flood Insurance Rate Map (FIRM) is the insurance and floodplain map produced by FEMA that identifies, based on detailed or approximate analysis, the areas subject to flooding within an area.

Existing Conditions

Water resources, including Waters of the US, Waters of the State, wetlands, and floodplains are present within the Project Study Area.

Waters of U.S., Waters of the State, and Wetlands

The watersheds within the Project Study Area include one 8-digit HUC watershed, the Lower Big Sioux River subbasin, 10170203, and one ten-digit HUC watershed, the Skunk Creek watershed, 1017020311. Several 12-digit HUC watersheds are found within the Project Study Area, including the Beaver Lake watershed, 101702031101, Buffalo Ridge-Skunk Creek, 101702031102, Willow Creek, 101702031103, and Outlet Skunk Creek, 101702031105 (USGS 2023). Refer to **Figure 5** in **Appendix A.**

The EPA's regulations implementing Section 305(b) of the CWA require states to identify waterbody segments where the water quality does not meet the applicable water quality standards. Section 303(d) of the CWA requires states to develop Total Maximum Daily Loads (TMDLs) for those segments that do not meet the applicable water quality standards. The TMDLs identify the sources of the pollutants contributing to the impairment and allocate an allowable loading for each point source and nonpoint source of pollution.

The SDDANR monitors and assesses the water quality for watersheds across the state. Every two years, the SDDANR publishes a report integrating the requirements of Section 303(d) and 305(b) of the federal CWA. This report identifies waters of the state that are not meeting their water quality standards and prioritizes the development of the TMDLs. The 2024 Integrated Report identified the following water quality impairments in the Project Study Area:

- Skunk Creek is impaired due to *E. coli* bacteria.

These segments need to be assessed to identify the cause(s) of the impairment and identify the total maximum daily load (TMDL) for each pollutant. The EPA has approved TMDLs for for *E. coli* and total suspended solids in the Big Sioux River near the study area. A TMDL has not yet been developed for total dissolved solids in this segment of the Big Sioux River. The *E. coli* TMDL for Skunk Creek has been developed by SDDANR and is nearing completion. All projects shall be developed consistent with the approved TMDLs.

The windshield survey and desktop delineation identified approximately 5.5 acres of potential jurisdictional Waters of the U.S. within the Project Study Area, including Skunk Creek, Willow Creek, and unnamed tributaries to Skunk Creek and Willow Creek. Verification of jurisdictional status would be completed by the US Army Corps of Engineers (USACE) during the Section 404 permit application process. Skunk Creek and Willow Creek are perennial streams. Willow Creek flows south, eventually joining Skunk Creek, which continues flowing in a southeasterly direction, eventually joining the Big Sioux River east of Interstate 29 and north of Louise Avenue in Sioux Falls. The unnamed tributaries to Skunk Creek and Willow Creek were intermittent, likely having spring flows that diminish in the late summer and fall months.

SDDANR has assigned beneficial uses to Waters of the State. Skunk Creek is classified by SDDANR for the following beneficial uses:

(6) Warmwater marginal fish life propagation waters;
(8) Limited-contact recreation waters;
(9) Fish and wildlife propagation, recreation, and stock watering waters; and

(10) Irrigation waters.

Willow Creek and the unnamed tributaries are classified by SDDANR for the following beneficial uses:

(9) Fish and wildlife propagation, recreation, and stock watering waters; and
(10) Irrigation waters.

Based upon the desktop delineation, there are approximately 75 acres of wetlands present within the Project Study Area. Wetland basins vary in size and are primarily classified as seasonal and temporary resources, likely becoming dry in the late summer and fall months. Although not as common as basin wetlands, sloped wetlands also occur throughout the corridor. Riverine fringe wetlands were present adjacent to the stream channels. Desktop delineated wetlands and waters of the U.S. within the Project Study Area are shown on **Figures 6a** to **6o** in **Appendix A**.

The wetlands are classified by SDDANR for the following beneficial use:

(9) Fish and wildlife propagation, recreation, and stock watering waters.

Stormwater

Water quality and the intensity, timing, and velocity of runoff events are closely related to stormwater management. Surfaces with vegetation slow or capture runoff, but when these areas are replaced by impervious surfaces such as roofs, driveways, parking lots, roads, and streets, runoff is substantially increased. Stormwater management, especially on an area wide basis, has generally not been considered in the rural development review process. Minnehaha County is establishing Best Management Practices (BMP's) for a stormwater management program. BMPs would include vegetated filter strips, permeable pavement, riparian areas, and open space designs that prevent stormwater pollution from entering waterways (Minnehaha County 2015).

Existing stormwater drainage structures in the Project Study Area within the ROW of state-maintained roadways are under the jurisdiction of the SDDOT. SD 38 in the Project Study Area has multiple culvert pipe structures, two box culvert structures at the unnamed tributary crossings of Skunk Creek, one concrete slab bridge over Skunk Creek, and box culvert structures at the unnamed tributary of Willow Creek and Willow Creek crossings.

The SDDANR has issued a Municipal Separate Storm Sewer System permit to the SDDOT under the authorities of the CWA. Under this permit, the SDDOT has been required to develop and implement a stormwater management program to control stormwater runoff and control erosion associated with the South Dakota interstate road system around the city of Sioux Falls.

Floodplains

The Project Study Area crosses several designated FEMA floodplain areas (FEMA 2023a). The Flood Insurance Rate Map (FIRM) number and information regarding mapped floodplain, if present, is available in **Table 7**.

Zone A or Zone AE refers to areas with a 1% annual chance of flooding or 100-year floodplain. Zone AE refers to areas where base flood elevations have been modeled for the 100-year floodplain and a floodway has been identified. The designated floodplains are shown on **Figures 6a** to **6o** in **Appendix A**.

Table 7. FEMA FIRM and Floodplain Designation

FIRM No.	Floodplain Designation	Associated Waterway
46099C0225D	Zone X	Surface Water Bodies – Voelker I WPA
46099C0240D	None	None
46099C0245D	None	None
46099C0410D	Zone A, Zone AE, LOMRs	Unnamed Tributary of Skunk Creek, Skunk Creek
46099C0426D	None	None
46099C0427D	Zone A	Unnamed Tributary of Willow Creek, Willow Creek
46099C0431D	Zone A	Unnamed Tributary of Willow Creek

A Letter of Map Revision (LOMR) is FEMA's modification to an effective FIRM, Flood Boundary and Floodway Map, or both. LOMRs are generally based on the implementation of physical measures that affect the hydrologic or hydraulic characteristics of a flooding sources and thus result in the modification of the existing regulatory floodway, the effective Base Flow Elevations (BFEs), or the Special Flood Hazard Area (SFHA) (FEMA 2023b). Within the Project Study Area in Hartford, there are four LOMRs in effect: LOMR 10-08-0469P (effective 2/14/2011), LOMR 13-08-1106P (effective 6/16/2014), LOMR 16-08-0101P (effective 9/23/2016), and LOMR 21-08-0753P (effective 3/23/2022) (FEMA 2023a).

Groundwater

Water resources within Minnehaha County occur as surface water and groundwater. Glacial aquifers, primarily unconsolidated sand and gravel deposited as outwash by meltwater from glaciers, underlie about 240 square miles of Minnehaha County. The Project Study Area is underlain by portions of three glacial aquifers (the Big Sioux, Skunk Creek, and Wall Lake) and two bedrock aquifers (Split Rock Creek and Sioux Quartzite) (Niehus 1994). In Minnehaha County, a Water Source Protection Overlay District has been established to preserve the quality and quantity of the area's water resources to ensure a safe and adequate supply of drinking water. The Water Source Protection Overlay District is identified within the Skunk Creek and Willow Creek drainages (Minnehaha County 2017). The Water Source Protection Overlay District is shown on **Figures 6h-6k** and **6m-6o.** Permitted, conditional, and prohibited land uses allowed within the Water Source Protection Overlay District can be found in **Table 8** (Minnehaha County 2024).

Table 8. Uses within the Water Source Protection Overlay District in Minnehaha County

Permitted Uses	Conditional Uses	Prohibited Uses
1. Tanks used for the storage of regulated substances shall adhere to the regulations set forth in the zoning ordinances in Article 14A.04 of the Minnehaha County ordinances. 2. Sewer lines must be PVC material with sealed joints. 3. When pastured animals are confined for winter feeding and the number exceeds 200 animal units, measures shall be employed to contain all wastes on site. Winter feeding of pastured animals shall not constitute a concentrated animal feeding operation.	Conditional use permits are required for any use which involves the storage and/or use of a regulated substance. All available methods of preventing and controlling contamination of groundwater from waste and other contaminants shall be employed.	1. Sanitary landfill, solid waste transfer facility. 2. Waste disposal except the spreading of solid and liquid animal waste. 3. Sewage disposal pond except when in conjunction with a concentrated animal feeding operation, which is a nonconforming use. In such case, a conditional use permit shall be required for the disposal pond. 4. Disposal of radioactive waste. 5. Disposal of snow containing de-icing chemical. 6. Concentrated animal feeding operation. 7. Injection well (Class V). 8. Petroleum products terminal. 9. Junk or salvage yard. 10. Manufacturing of a regulated substance. 11. Unenclosed storage of road salt 12. Cemetery.

Next Steps

The No Build Alternative would have no effect to Waters of the U.S., Waters of the State, wetlands, stormwater, or floodplains.

All four alternatives have the potential to have permanent impacts to Waters of the U.S. As projects identified from this study progress, field delineations for each survey area would be conducted. For each project, a wetland delineation report and a request for an approved jurisdictional determination would be submitted to the USACE. Projects should be designed to minimize impacts to aquatic resources, wetlands, and streams.

Under Nationwide Permit 14 or 23, if permanent impacts are kept to less than 0.1 acre for jurisdictional, individual wetlands and 0.03 acre for Other Waters of the U.S., a pre-construction notification (PCN) to the USACE would not be needed. If permanent impacts exceed 0.1 acre to any jurisdictional wetland or 0.03 acre to any Water of the U.S., a PCN would be required. Compensatory mitigation under Section 404 would be required for all losses of stream bed that exceed 0.03 acre and permanent impacts to wetlands above 0.1 acre. For determination of permit type (nationwide or individual) for each specific improvement project, coordination with the USACE would be completed. If an individual Section 404 permit is needed, a Section 401 State Water Quality Certification would be prepared and submitted to SDDANR and the USACE. Non-jurisdictional wetlands are still waters of the state. For non-jurisdictional wetlands, Executive Order (EO) 11990 would require mitigation for any natural wetland areas.

Projects identified in this study that would disturb one or more acres will be required to obtain coverage under the SDDANR *General Permit Authorizing Stormwater Discharges Associated with Construction*

Activities under the South Dakota Surface Water Discharge System (General Permit) for discharge activities to waters of the state. The General Permit requires the development of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP would include temporary and permanent sediment and erosion control measures to minimize soil erosion and the discharge of pollutants into waters of the state. A Notice of Intent would be prepared and submitted to SDDANR for coverage under the General Permit.

Drainage and stormwater analysis would be needed as the selected alternatives move forward into specific projects. Pipe, culvert, and bridge structures may require modifications with any future roadway improvements. Modifications would be reviewed for each specific project identified in this study and would follow SDDOT design standards. Any future roadway improvements would need to be evaluated to ensure applicable water quality standards are met, with potential permitting involving state and federal agencies as applicable.

A project located within the Project Study Area would be anticipated to be designed to not affect the hydrologic or hydraulic characteristics of the area or result in modification to the existing floodways. FEMA would be contacted to review the Project to determine if the Project would have a no rise or require a Conditional Letter of Map Revision (CLOMR).

WILD AND SCENIC RIVERS

The National Wild and Scenic Rivers System was created by Congress in 1968 (Public Law 90-542; 16 U.S.C. 1271 et seq.) to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. The Wild and Scenic River Act is notable for safeguarding the special character of these rivers, while also recognizing the potential for their appropriate use and development. South Dakota has approximately 9,513 total miles of river, of which 93 miles are designated as wild & scenic, less than 1% of the state's river miles. The Missouri River is designated as wild and scenic from Gavins Point Dam near Yankton, downstream to Ponca State Park, Nebraska, and from Fort Randall Dam to Lewis and Clark Lake.

Methodology

The National Wild and Scenic Rivers System website was reviewed for rivers designated as wild and scenic within the NEPA Study Area (NWSRS 2022).

Existing Conditions

There are no designated wild and scenic rivers in the NEPA Study Area.

Next Steps

No further steps are needed. Consideration of Wild and Scenic Rivers is not required in subsequent NEPA studies.

THREATENED AND ENDANGERED SPECIES, MIGRATORY BIRDS, EAGLES, AND UNIQUE WILDLIFE HABITAT

NEPA requires the identification and assessment of reasonable alternatives that will avoid and minimize adverse effects on the quality of the natural environment, which includes species and habitats protected under the Endangered Species Act (ESA), the Migratory Bird Treaty Act (MBTA), and the

Bald and Golden Eagle Protection Act (BGEPA). Protecting threatened and endangered species in the planning, construction, and maintenance of transportation projects is an important step in complying with the ESA.

Methodology

The United States Fish and Wildlife Service (USFWS) provides a list of threatened or endangered species by county. A list of threatened and endangered species for specific areas can also be accessed by requesting an Official Species List through the USFWS Information for Planning and Consultation (IPaC) system. An official species list of threatened and endangered species for the Project Study Area was obtained through the USFWS IPaC system (USFWS 2022a). The IPaC query and species list was updated in June 2024.

South Dakota Game Fish & Parks (SDGFP) provides a listing of documented occurrences of state listed threatened and endangered species by county. A list of documented occurrences in Minnehaha County was obtained on the SDGFP website (SDGFP 2016).

Existing Conditions

The Project Study Area lies within two ecoregions, the Prairie Coteau Region of the Northern Glaciated Plains Ecoregion and the Loess Prairies Region of the Western Corn Belt Plains Ecoregion (EPA 2022a). The Prairie Coteau Region has a characteristic tightly undulating and hummocky landscape, no distinct drainage pattern, and closely spaced semipermanent and seasonal wetlands. The Loss Prairie Region is generally rock-free with scattered wetlands on level to gently rolling plains, with most of the original tallgrass prairie vegetation having been converted to intensive row crop agriculture (EPA 2022a).

Water resources within Minnehaha County occur as surface water and groundwater. The Project Study Area is underlain by portions of three glacial aquifers (the Big Sioux, Skunk Creek, and Wall Lake) and two bedrock aquifers (Split Rock Creek and Sioux Quartzite) (Niehus 1994). The Project Study Area is in the lower Big Sioux River Basin, with drainage occurring in an easterly direction toward the Big Sioux River, which delineates the South Dakota-Iowa border (Niehus 1994). Wildlife species use aquatic ecosystems and terrestrial corridors within the Project Study Area for habitat, breeding and nesting areas, escape cover, travel corridors, and preferred food sources. Aquatic and terrestrial animals can travel parallel to the shore or creek edges to move between similar habitat patches in fragmented landscapes with otherwise sparse natural cover. Wildlife can also move perpendicular to the riparian edge, to and from aquatic and terrestrial habitats, to forage, lay eggs, or even hibernate. Although wildlife can utilize these areas, movement in either direction away from riparian areas often exposes wildlife to threats such as vehicle strike and predation, especially in maintained landscapes with minimum natural cover.

Suitable aquatic and terrestrial habitats for a variety of species are present within the Project Study Area. Vegetation, including cropland, grasses, and larger trees, is present within the Project Study Area, and is likely utilized by wildlife species, including migratory bird species.

Threatened and Endangered Species

The USFWS IPAC query (Project Code No. 2023-0028018) returned three threatened, one endangered, one proposed endangered, and one candidate species as having the potential to occur in the Project Study Area. The IPAC query was updated in October 2024 (USFWS 2024a). Refer to **Table 9.**

Table 9. Federally Listed Endangered, Threatened, or Candidate Species in the Project Study Area

Common Name	Scientific Name	Listing Status
Northern Long-eared Bat	*Myotis septentrionalis*	Endangered
Rufa Red Knot	*Calidris canutus rufa*	Threatened
Dakota Skipper	*Hesperia dacotae*	Threatened
Monarch Butterfly	*Danaus plexippus*	Candidate
Western Regal Fritillary	*Argynnis idalia occidentalis*	Proposed Threatened
Western Prairie Fringed Orchid	*Platanthera praeclara*	Threatened

The SDGFP Environmental Review Tool was used to identify state and federally listed threatened, endangered, and candidate species that have a range distribution within the Project Area (SDGFP 2022b). Within the project area, one additional species has been documented, the Lined Snake. Refer to **Table 10.** The northern river otter (*Lontra canadensis*) is also listed on the SDGFP list as a documented state-threatened species found in Minnehaha County (SDGFP 2016); however, the otter was removed from the state list in May 2020.

Table 10. State Listed Endangered or Threatened Species Documented in Minnehaha County

Common Name	Scientific Name	Listing Status
Lined Snake	*Tropidoclonion lineatum*	State Endangered

The following species narratives provide summarized habitat descriptions for the federal and state listed species above.

Northern Long-eared Bat

The northern long-eared bat (NLEB) is a wide-ranging bat species that typically overwinters in caves or mines, called hibernacula, and spends the remainder of the year in forested habitats. The winter hibernacula for the NLEB generally have constant air temperatures, high humidity, and no air currents. Bats tend to hibernate most often in small crevices or cracks. During the summer and portions of the fall and spring, NLEBs may be found roosting singly or in colonies underneath bark, in cavities or crevices of both live trees and snag (dead) trees. The species has also been found roosting in structures, such as barns and sheds (USFWS 2024b).

Riparian wooded areas, rural residential shelterbelts, and man-made structures are present within the Project Study Area and could provide suitable habitat for the NLEB.

Rufa Red Knot

The rufa red knot is a medium-sized shorebird, easily recognized during the breeding season by its distinctive rufous (red) plumage. The breeding range of the species is in the central Canadian Arctic, with nesting occurring in dry, slightly elevated tundra locations, often on windswept slopes with little vegetation. Nest sites are generally within 600 feet of a freshwater wetland. Each year, some individuals make one of the longest distance migrations, traveling up to 19,000 miles annually from the Canadian Arctic to the wintering grounds in South America, or vice versa (USFWS 2020). Although not a common occurrence, rufa red knots have been observed within South Dakota, which can provide stop-over habitat and staging areas along river corridors.

Suitable habitat for the rufa red knot does not exist within the Project Study Area.

Dakota Skipper

The Dakota skipper is a small butterfly that lives in high-quality mixed and tallgrass prairie. The species

experienced a decline coinciding with the conversion and degradation of its prairie habitat, losing 85-99% of its original tallgrass prairie in its historical range. The Dakota skipper lives in two types of prairie habitats: moist bluestem prairie with three wildflower species (wood lilies, harebells, and smooth camas) or upland prairie that is relatively dry and dominated by bluestem grasses, needlegrasses, and coneflowers (USFWS 2024c).

Vegetation within the Project Study Area primarily includes roadside ditches consisting of smooth brome grass that is mowed annually. Moist bluestem prairie and upland prairie grasses are unlikely to occur within the Project Study Area due to repetitive mowing and haying during the growing seasons. Therefore, suitable habitat for the Dakota skipper does not exist within the Project Study Area.

Monarch Butterfly

The monarch butterfly is large and conspicuous, with bright orange wings covered with black veins and surrounded by a black border with white spots. During the breeding season, monarchs lay their eggs on their obligate milkweed host plant (*Asclepias s*pp.), and larvae emerge after two to five days. The larvae feed on milkweed, pupate into a chrysalis, and emerge as an adult butterfly 15 to 32 days after initially hatching. Milkweed and flowering plants are required for monarch habitat; adult monarch butterflies will feed on the nectar of many species of flowers during migration and breeding but will only lay eggs on the milkweed plant (USFWS 2024d).

Given the likely presence of milkweed in roadside ditches, the monarch butterfly is likely present within the Project Study Area. As a candidate species, monarchs have no legal status under the ESA (50 CFR part 402) on non-federal lands and will be reevaluated in 2024 for listing. However, on federally owned lands, a more pro-active approach to avoidance of activities that may lead to take of the species may be implemented during the May 1 to August 31 timeframe, the larval growth season of the monarch butterfly.

Western Regal Fritillary

The western regal fritillary is similar to the monarch butterfly in appearance; however, it is smaller in size. The western regal fritillary has six legs and vibrant orange wings with black marks that fade into a cobalt blue on the outer part of the wings with white spots along the border. Regal fritillary butterflies live in tall-grass prairie and other open and sunny locations such as damp meadows, marshes, wet fields, and mountain pastures. Regal fritillary habitat has been identified as large grassland areas with prairie remnants or lightly grazed pasture lands containing prairie vegetation where topography often includes hills and valleys. Regal fritillary butterflies depend on three main habitat components: violet hostplants for larvae, nectar plants for adults, and native warm-season bunch grasses that provide protective sites for all life stages (USDA 2024).

Western Prairie Fringed Orchid

The western prairie fringed orchid is a terrestrial member of the orchid family, growing up to 4 feet tall, and historically occurring in the tallgrass prairie region of the United States in areas of high soil moisture. Main threats to the orchid include the conversion of remnant prairie to cropland, spread of non-native invasive plant species, encroaching woody vegetation, and changes in hydrology. No populations are known to exist within South Dakota (USFWS 2021).

Vegetation within the Project Study Area primarily includes roadside ditches consisting of smooth brome grass that is mowed annually. Since there are no known populations of western prairie fringed orchid in South Dakota and tallgrass prairie does not exist in the Project Study Area, the western prairie fringed orchid is not expected to occur in the Project Study Area.

Topeka Shiner

The Topeka shiner is a small minnow that lives and breeds in graveled pools of low-order prairie streams with low flows and floodplain connectivity. After being federally listed in 1999 as an endangered species, survey efforts revealed additional extant populations in South Dakota and Minnesota, while population reductions continue in other states. South Dakota's Topeka shiner extant streams include 27 streams within the James River watershed, not including the James River main stem, 15 streams within the Vermillion River watershed, including the Vermillion River main stem, and 30 streams within the Big Sioux River watershed (10 shared with Minnesota), including the Big Sioux River main stem (USFWS 2018).

Topeka shiners have been documented within Minnehaha County. The Skunk Creek drainage is listed as "potentially occupied", and the Willow Creek drainage has documented occurrences prior to 1999 (SDGFP 2022a).

Lined Snake

The lined snake is a small snake (9-15 inches) with three light-colored stripes running the length of its body. The lined snake is found in open grasslands and sparsely wooded areas, preferring moist habitat near springs, ponds, marshes, streams, and rivers. The snake can also be found in urban areas such as city lots, parks, cemeteries, and gardens. Within South Dakota, individuals have been documented in Hutchinson, Minnehaha, Lincoln, and Union Counties (SDGFP 2020).

Minnehaha County has documented occurrences of the lined snake and, due to its occupancy of a variety of habitats, suitable habitat for the lined snake may exist in the Project Study Area.

Special Status Species

The birds listed below in **Table 11** are birds of particular concern either for occurring on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in the Project Study Area (USFWS 2024a).

Table 11. Special Status Species

Common Name	Scientific Name	Listing	Probability of Presence
American Golden-plover	*Pluvialis dominica*	BCC	September
Bald Eagle	*Haliaeetus leucocephalus*	BGEPA*	Year Round
Black Tern	*Chlidonias niger*	BCC	May
Black-billed Cuckoo	*Coccyzus erythropthalmus*	BCC	May
Bobolink	*Dolichonyx oryzivorus*	BCC	May – August
Chimney Swift	*Chaetura pelagica*	BCC	April – September
Eastern Whip-poor-will	*Antrostomus vociferus*	BCC	August
Franklin's Gull	*Leucophaeus pipixcan*	BCC	April – November
Grasshopper Sparrow	*Ammodramus savannarum perpallidus*	BCC	May-August
Hudsonian Godwit	*Limosa haemastica*	BCC	April
Lesser Yellowlegs	*Tringa flavipes*	BCC	April – May, August-Sept
Marbled Godwit	*Limosa fedoa*	BCC	April – May
Northern Harrier	*Circus hudsonius*	BCC	April – September
Pectoral Sandpiper	*Calidris melanotos*	BCC	April, May, July – October
Red-headed Woodpecker	*Melanerpes erythrocephalus*	BCC	May – June, August – Sept
Rusty Blackbird	*Euphagus carolinus*	BCC	March, April, October
Semipalmated Sandpiper	*Calidris pusilla*	BCC	April, May, August
Upland Sandpiper	*Bartramia longicauda*	BCC	April, June – July
Western Grebe	*Aechmophorus occidentalis*	BCC	April – May
Wood Thrush	*Hylocichla mustelina*	BCC	May

*Bald and Golden Eagle Protection Act

Migratory Birds and Eagles

The Migratory Bird Treaty Act (MBTA) of 1918 provides a program for the conservation of migratory birds that fly through the United States. The lead federal agency for implementing the MBTA is USFWS. The law requires federal agencies to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any migratory birds or result in the destruction or adverse modification of designated critical habitat of such species. The law makes it illegal for anyone to "take," possess, import, export, transport, sell, purchase, barter or offer for sale, purchase, or barter, any migratory bird, or their parts, feathers, nests, or eggs. "Take" is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities."

In South Dakota, there are several bird species that traverse the state, rear young, or use stop-over habitat. Migratory birds, in addition to those mentioned in **Table 11** above, are likely present within the Project Study Area, and include, but not limited to duck and goose species, mourning doves, American robins, red-tailed hawks, sandhill and whooping cranes, warblers spp., swallows spp., curlews spp., and American white pelicans.

Bald eagles are listed by USFWS as species of concern in the Project Study Area. The bald eagle is not listed on the BCC list but instead warrants attention because of the Bald and Golden Eagle Protection Act (BGEPA) or for potential susceptibilities in offshore areas from certain types of development or activities. The BGEPA prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald or golden eagles, including their parts (including feathers), nests, or eggs.

In South Dakota, bald eagles can be a year-round resident or a migratory species. Generally, eagles are observed near larger rivers, such as the Missouri River, and open-water reservoirs where there is an abundant food supply and limited human activity. During a field reconnaissance in March 2024, a biologist from Banner Associates confirmed an active bald eagle nest and two bald eagle adults within the Project Study Area. The nest is located on the north side of SD 38 approximately 0.5 miles east of Humboldt, near Beaver Lake. Foraging and roosting habitat for bald eagles exists along the Project Study Area and within wooded reaches of Skunk Creek and Willow Creek outside of the Project Study Area. Several observations of bald eagles have been recorded near the Project Study Area (eBird 2022).

Next Steps

The No Build Alternative would have no effect on threatened or endangered species, migratory birds, eagles, or unique wildlife habitats.

As projects are identified from the study, coordination with the USFWS and SDGFP should occur, focusing on impacts to threatened or endangered species, migratory birds, eagles, and unique wildlife habitats. USFWS lists are valid for 90 days; an updated species list would be needed prior to coordination with the USFWS. For the species that are likely present in the Project Study Area, project commitments would be identified for each project during agency coordination.

CULTURAL RESOURCES

Section 106 of the National Historical Preservation Act (NHPA), as amended, guides the process of considering the effects of federal undertakings on historic properties. As such, Section 106 applies to federal agencies and to projects that are carried out with federal financial assistance; or those requiring a federal permit, license, or approval. Section 106 seeks to accommodate historic preservation concerns with the needs of federal undertakings through consultation among the agency officials and

other parties with an interest in the effects of the undertaking on historic properties. This section defines key terms used in the protection of historic properties, introduces the applicable authorities, and describes the environmental commitments established for compliance with Section 106.

Section 4(f) of the USDOT Act of 1966 provides protection to publicly owned parks, recreation areas (including recreational trails), wildlife or wildfowl refuges, or any publicly or privately-owned historic site listed or eligible for listing on the NRHP. Additional information on the correlation between Section 106 and Section 4(f) will be provided in Section 4(f) and Section 6(f) Resources section below.

Methodology

A Level I cultural record search typically consists of initial records, maps, and literature searches, and will identify known cultural resources from previous investigations conducted within the Area of Potential Effect (APE). Literature searches may include sources from a state's State Historic Preservation Office, universities, libraries, museums, and historical societies. The Level I record search provides a cultural history of a project area and evaluates the area's known and potential sensitivity for cultural resources which may be affected by construction impacts. A Level I cultural records search to identify historic properties within the Project Study Area was requested through the State Archaeological Research Center (SARC).

Existing Conditions

A Level I record search, *Class I Record Search for the South Dakota Department of Transportation (SDDOT) SD38 Corridor Planning Study, associated with SDDOT Project HP 5596(24)P, PCN 08LK, Minnehaha County, South Dakota,* was conducted. The record search returned two archaeological sites, 25 previous cultural resource surveys, one bridge, and two structures that have been previously documented within the Project Study Area. One of the two archaeological sites within the Project Study Area corridor have been determined eligible for the National Register of Historic Places (NRHP). Additionally, one of the two previously documented structures is a building that is unevaluated for the NRHP. Within a one-mile radius of the Project Study Area, eight archaeological sites, 52 previous surveys, 12 bridges, two cemeteries, and 35 structures have been recorded (SARC 2023).

An inactive railroad grade is located within the Project Study Area; the rails have been removed from the grade. The Level I record search determined portions of the railroad grade, once part of the Chicago & Northwestern Railroad, are eligible under the NRHP within the Project Study Area (SARC 2023). Additional unrecorded segments of the railroad grade are visible on aerial imagery within the Project Study Area and would also likely be eligible for listing under the NRHP.

Next Steps

The No Build Alternative would have no effect on cultural resources.

As alternatives for the Project are defined, impacts on historical resources will be assessed. The APE for each project would be created and evaluated for the presence of cultural or historical resources. A Level III Cultural Resources Survey and Report would be completed for areas within the APE that have not been previously surveyed.

To the extent possible and practical, identified cultural resource site boundaries and historic structures that are eligible to the National Register of Historic Places (NRHP) should be avoided. If these sites and structures cannot be avoided, efforts to minimize effects should be implemented. One unevaluated structure within the Project Study Area will require evaluation under the NRHP. A Class III intensive

cultural resource survey is recommended by the South Dakota State Historic Preservation Office (SHPO) (SARC 2023) and would be conducted for projects having the potential to impact areas not previously disturbed. Minimization methodologies, if needed, would be determined as the Project progresses. Consultation with SHPO would occur during the NEPA process to determine the effect to historical or cultural resources.

SECTION 4(F) AND SECTION 6(F) RESOURCES

Section 4(f) of the U.S. Department of Transportation (USDOT) Act of 1966 provides protection to publicly owned parks, recreation areas (including recreational trails), wildlife or wildfowl refuges, or any publicly or privately-owned historic site listed or eligible for listing on the NRHP. Section 4(f) only applies to USDOT agencies. Compared to the many procedural environmental laws that apply to federal highway actions, Section 4(f) is a substantive law that precludes project approval if there is a use of a Section 4(f) property when a prudent and feasible avoidance alternative is available.

Some park and recreational resources are also regulated under the Land and Water Conservation Fund (LWCF) Act of 1965, which established a federal funding program to assist states in developing outdoor recreation sites. Section 6(f) of the LWCF ensures that a recreational area funded with LWCF assistance is continually maintained in public outdoor recreation use unless the National Park Service (NPS) approves the conversion in accordance with the Statewide Comprehensive Outdoor Recreation Plan (SCORP) (36 CFR 59.3). When a Section 6(f) land conversion is proposed for a highway project, replacement land will be necessary. Coordination for Section 6(f) projects is completed with the SDGFP Grants Coordinator. SDGFP will consult with the NPS Midwest Regional Director or designee for a determination on the potential impacts on Section 6(f) properties and replacement properties.

Methodology

The SDGFP Environmental Review Tool was utilized to determine the presence of publicly owned parks, recreation areas or trail systems, wildlife or waterfowl refuges, game production areas, and easements managed by the Natural Resources Conservation Service or USFWS (SDGFP 2022b). The results of the SARC Level I record search were utilized to determine the presence of any known publicly or privately owned historic sites (SARC 2023). Coordination with the SDGFP Section 6(f) coordinator was conducted to determine if any Section 6(f) properties are within the Project Study Area.

Existing Conditions

Section 4(f)

The Voelker 1 Waterfowl Production Area (WPA) is located south of SD 38, east of Humboldt. Refer to **Figure 5b**. The WPA is federal property managed by the USFWS Madison Wetland Management District. The WPA is located in Section 14, Township 102 North, Range 52 West, south of SD 38. Signs designating the boundary of the WPA are located along the property boundary, and the property includes the inactive railroad grade of the Chicago & Northwestern Railroad from the 258th Street intersection of SD 38, west to 459th Avenue. The WPA boundary on the south side of SD 38 has a barbed wire fence present. There are no USFWS or Natural Resource Conservation Service (NRCS) easement areas present within the Project Study Area (SDGFP 2022b).

The Hartford City Park is on the southwest side of SD 38 across from the Central Valley Golf Course. The recreational opportunities within Hartford include the City Park, a swimming pool, baseball diamonds, softball diamonds, tennis courts, swings, slides, picnic shelters, basketball court, restrooms, and changing rooms. Refer to **Figure 5g** and **5h.**

The Central Valley Golf Course is present within Section 22, Township 102 North, Range 51 West in the Project Study Area (County Office 2023). The golf course is owned and operated by All In Golf, LLC and is open to the public. Refer to **Figure 5g** and **5h**.

One recreational facility, the Michael J. Fitzmaurice Trail, parallels the north side of SD 38 from the intersection of SD 38 and E. 2nd Street in Hartford, extending 1.5 miles east to the intersection with Crestview Drive in the Hartford Hights Addition residential development east of Hartford.

The Sioux Falls MPO Bicycle Plan identified SD 38 as a roadway that provides connectivity and identified key intersections along SD 38 such as Colton Road, Mickelson Road, and I-90 to 463rd Avenue (Western Avenue, Hartford) that need capacity improvements (MPO 2020) for recreation. Section 4(f) applies only when the land is publicly owned land and the public agency that owns the property has formally designated and determined it to be significant for a park, recreation area, or wildlife and waterfowl refuge. The future planned bike route is not currently considered a Section 4(f) property as it is not presently publicly owned or formally designated.

The state of South Dakota owns a 54.39-acre parcel of land at the far eastern end of the Project Study Area, northwest of the intersection of SD 38 and Marion Road. Regional offices for the SDDOT and the SDGFP are located on this parcel; this land is not being used for a park or other recreational activity.

Several listed, eligible, and unevaluated historical resources are present within the Project Study Area. These resources have been previously addressed in the *Cultural Resources Existing Conditions* section above.

Section 6(f)

There are currently no Section 6(f) properties within or adjacent to the Project Study Area. Coordination with SDGFP noted that the Hartford City Park is encumbered with Section 6(f) funds, but a buffer exists between the park and the highway (SDGFP 2023).

Next Steps

The No Build Alternative would have no effect on Section 4(f) or Section 6(f) resources.

As projects identified during this study progress, coordination will occur to confirm the 4(f) or 6(f) resources noted above and check for any additional resources that may have been developed or added since the writing of this document. During preliminary and final design of each project, avoidance or impacts of the resources will be considered. The current Section 4(f) resources present in the Project Study Area include the pedestrian trail, the WPA, and the previously evaluated eligible sites and historical structures.

At the implementation of any upcoming projects in the corridor, the future bike trails would need to be reviewed to determine their status as 4(f) resources. Currently, future trails do not qualify as Section 4(f) resources. If the 4(f) resources cannot be avoided, coordination would occur to determine the use of the resource between the agency of jurisdiction, SDDOT, and FHWA.

PALEONTOLOGICAL RESOURCES

Paleontological resources are the fossilized remains of prehistoric plant and animal organisms, as well as the mineralized impressions (trace fossils) left as indirect evidence of the form and activity of such organisms. These non-renewable resources may be scientifically significant.

Methodology

A paleontological survey is not necessary as part of this study. There are no laws within South Dakota requiring the review of paleontological resources as a part of the NEPA process. During the coordination process, if a comment from a federal land managing agency is received, paleontological resources should be considered. Additionally, paleontological resources must be considered if they are identified as components of cultural resources or Traditional Cultural Properties (TCPs).

Existing Conditions

The NEPA Study Area lies in an area formed by the Precambrian period, the earliest part of Earth's history, spanning 4,000 to 543 million years ago. Two exposures of Precambrian rocks exist within South Dakota, one found in the Black Hills, and one found in the eastern part of the state, comprising the Sioux Arch. The Sioux Arch consists of metamorphosed sandstone and claystone deposited in a shallow sea. Catlinite, a type of claystone, was mined by Native Americans and used to make ceremonial pipes and figurines. Due to the metamorphic nature of these rocks, no fossils have been found within them (Paleontological Portal 2023).

The Project Study Area does contain federal land, the Voelker I WPA, managed by the USFWS Madison Wetland Management District.

Next Steps

The No Build Alternative would have no effect on paleontological resources.

As projects identified during this study progress, additional paleontological resource coordination may be needed due to a federal land managing agency owning property within the Project Study Area.

LAND USE AND ECONOMIC RESOURCES

Land use affects the quality of life and environment of the community. Land use designations often include zoning, future land use and growth management areas, conservation easements, urban infrastructure service boundaries, and annexation plans, as well as past, existing, and future development trends. Incorporating current and future land use and forecasting land use and trends are a key consideration in transportation planning, design, and construction.

Economic resources consider the business trends within an area. These resources are complemented by depictions and descriptions of current and future land uses that provide an understanding of areas of economic growth.

Methodology

A review was conducted of existing and proposed land use in the NEPA Study Area and any anticipated changes in land use utilizing available information including planning documents, zoning maps, master plans, US Geological Survey (USGS) topographical maps, and GIS data, for Hartford, Humboldt, Sioux Falls, and Minnehaha County. The specific planning documents utilized included:

- **Humboldt Comprehensive Plan 2003 – 2025.** In 2003, the plan was completed to accomplish three main goals: to ensure the health and safety of citizens, protect natural resources, and enhance the visual quality of the community.
- **Minnehaha County Zoning Map (2012).** This zoning map was configured in 2012 to designate land use zones for Minnehaha County. The map was included in the Envision 2035

Comprehensive Plan. Land use zoning categories shown on the map are accurate as of the date of this report. Updated information can be attained by contacting the Minnehaha County Planning and Zoning, GIS Department.

- **Envision 2035 Comprehensive Plan (2015).** Minnehaha County adopted this plan for the purpose of protecting and guiding the physical, social, economic, and environmental development of the county; to protect the tax base; to encourage a distribution of population or mode of land utilization that will facilitate the economical and adequate provisions of transportation, roads, water supply, drainage, sanitation, education, recreation, or other public requirements to lessen governmental expenditure; and to conserve and develop natural resources.
- **Shape Sioux Falls 2040 Comprehensive Plan (2016).** Updates to the plan were completed in 2019 and 2022 to accommodate maps for development areas, sanitary availability, water and roads, drainage, and future land uses.
- **Hartford Comprehensive Plan 2017-2037.** In 2017, the plan was completed to accomplish two primary purposes: One, to address the planning requirements of state law while also providing a sound and logical basis for city growth and management strategies, and two, to provide predictability about the potential land uses and timing of development. This strategy would allow both public and private sectors to make informed decisions in real estate and capital investments.
- **Go Sioux Falls Long Range Transportation Plan (2020).** The plan would guide transportation planning activities and strategies to shape the greater Sioux Falls region's transportation network.

Existing Conditions

Land uses zoned within Minnehaha County have been grouped into five broad categories: farm/agricultural, commercial/industrial, rural residential, developed, and recreation/conservation (Minnehaha County 2012). The Humboldt, Hartford, and Sioux Falls comprehensive plans have designated zoning and land use information, described more in detail below.

- Farm/agricultural land use areas were mentioned in all the comprehensive plans and are located outside of the city limits of Humbolt, Hartford, and Sioux Falls. Primary uses in these designated areas are mainly cultivated crops, pasture, or hay land.
- Residential areas were discussed in the Humboldt, Hartford, and Sioux Falls comprehensive plans and are found within the cities themselves and scattered throughout the SD 38 corridor.
- Humboldt's Comprehensive Plan evaluated urban land use, including industrial, commercial, single-family residential, multi-family residential, institutional and governmental, transportation and utility, conservation and recreation, and agricultural.
- Hartford's Comprehensive Plan evaluated land uses, including industrial, commercial, mixed-use, residential, multi-family residential, manufactured housing, institutional, parks, recreation and open space, and vacant.
- Hartford was planning a future Wastewater Treatment Facility (WWTF) along SD 38 east of Hartford; this facility is currently under construction and is anticipated to be operational by July 2025.
- Sioux Falls Comprehensive Plan evaluated land uses including single-family, multi-family, office/institutional, commercial, industrial, mining/airport, open space, agriculture, serviceable lots, and other uses.

Industrial use zoning is present near Hartford and Sioux Falls, including:

- Buffalo Ridge Ghost Town and Country Store, ANCO Underground, Cemcast pipe and Precast, and Meyer Truck and Trailer located south of Exit 390 on SD 38.

Commercial areas and businesses present along the Project Study Area corridor are identified in **Table 12**. These businesses utilize SD 38 as a critical east/west route for transport of goods and access for customers.

Table 12. List of Businesses within the NEPA Study Area

Name	Business Type	Name	Business Type
Siemonsma Electric LLC	Construction Company	Grocott Ink and Thread	Custom Clothing
Humboldt Fire Hall	Emergency Services	Coffee Cup Fuel Stop	Gas Station
Big J's Roadhouse	Restaurant	Pinecrest Estates	Apartments
Sinclair Station	Gas Station	Deer Hallow Apartments	Apartments
Ludens Inc.	Manufacturing	Daisy Storage	Storage
Reliabank (Humboldt)	Bank	The C3 Enterprise	Automotive Rental
Triple J Lumber	Lumber Provider	Central Valley Community Church	Church
St Ann Parish of Minnehaha County	Church	Caribou Coffee	Coffee Shop
Travis Taxidermy	Taxidermy	Light to the World Church	Church
Farmers Elevator	Elevator	American Inn by Wyndham Hartford	Hotel
N-Rich Plant Food	Grocery Store	Vanilla Bean Kings	Grocery Store
Main Street Humboldt Bar	Restaurant	Hofer Roofing	Contractor
The Deku Tree	Greenhouse	Elite Self Storage	Storage
Beckers Bright Beginnings	Daycare	Glanzer Performance	Automotive
Faith Lutheran Church	Church	Gillespie Outdoor Power Equipment	Hardware & Equipment
West Central Elementary School	School	Wrap Ability	Automotive
Needles Field West Central Baseball	Recreation	SD Lining Solutions	Contractor
West Central Baseball Association	Recreation	ABR Antique Mall	Shopping
Nortec Seeds	Seed Provider	Ideal Weight Solutions	Weight Loss Service
Roundhouse Trackless Trains	Manufacturing	Aunt-T'S-Ques Wayside Shoppe	Shopping
Hunters Pointe Shooting Complex	Recreation	Maras Incorporated	Farm Equipment
I-90 Speedway	Racetrack	HDC Storage	Storage
R Place Kennel	Pet Services	Blackburn Basement Systems	Construction Contractor
Haensel Distributing Company	Distributer	Impact Auto Works	Automotive
Central States Manufacturing Inc.	Manufacturing	The American Truck Store	Automotive
Giant Leap Design	Designer	Pro Framing Inc.	Framing Contractor
Swensen Park	Recreation	Jeff Murphy Auto Sales	Automotive Dealer
Pizza Ranch	Restaurant	Kieen Solution	Restaurant Supply Store
Aerial Ingenuity	Photographer	Ideker Construction	Construction Contractor
Hartford Building Center	Construction/ Lumber	Dakota Thrill Rides	Automotive
ATS Complete Diesel & Automotive	Automotive	RV & Boat Storage	Automotive
Reliabank (Hartford)	Bank	Block Works	Automotive
The Goat Bar and Grill	Restaurant	Dakota Classic Mustangs	Automotive
West Oaks Estates	Apartments	A & B Mobile RV Repair LLC.	Automotive/Recreation
Edward Jones Financial Advisor	Financial	R & R Self Storage	Storage
First Interstate Bank (Hartford	Bank	Guardrail Enterprises Inc.	Guardrail Supplier
United States Postal Service	Package/Shipping	West Central High School	School

Name	Business Type	Name	Business Type
Hartford Veterinary Clinic	Pet Services	West Central Special Education	School
Sherri Bostwick	Physician	Hartford Cemetery	Cemetery
Sunshine Foods	Grocery Store	Ignite Your Brand	Branding Agency
NAPA Auto Parts	Automotive	Maple Pass Apartment/Town Homes	Apartments
Barney & Coco's Pet Salon	Pet Services	Meter Fishing Tackle	Recreation
R & B Auto Sales and Services	Automotive	Carl V Carlson Company	Concrete Contractor
Get-n-Go Station (Hartford)	Gas Station	Goos RV	Automotive
Hartford Steak Co. Tavern	Restaurant	Buffalo Ridge Ghost Town	Shopping
Beaver Build Inc	Manufacturing	Buffalo Ridge Country Store	Gas Station
Knotty Gnome Variety and Salvage	Shopping	ANCO Underground	Contractor
Dollar General	Shopping/Grocery Store	Cemcast Pipe and Precast	Manufacturing
Subway	Restaurant	Meyer Truck and Trailer	Automotive
Great Life Fitness	Gym	Tuschen's Taxidermy	Taxidermy
Eich Law Offices	Law Services	McCrossan Boys Ranch	Social Services
Lemke's Fitness & Training Co	Gym	Diamond In the Ruff Grooming	Pet Services
Prairie Boutique	Shopping	38 Roadhouse	Bar/Restaurant
Stomping Grounds	Coffee Shop	TierPoint West Data Center	Utility Provider
Stepping Stones Preschool	School	South Dakota DOT	Public Service
Vista Crossing	Apartments	South Dakota Game, Fish and Parks	Public Services
Central Valley Golf Course	Recreation	South Dakota Highway Patrol	Emergency Services
Hartford Pool and Softball Fields	Recreation	ADP South Dakota	Payroll Service
COZY Home and Lighting	Shopping/Design	Kinder Academy	Child Care
A1 Plumbing Heat and Air	Construction	University Hills Village	Apartments
Century Square Park	Recreation	Credo's Pub	Restaurant
Hartford United Methodist Church	Church	The Brixx	Apartments
Salon Capella	Salon	Hazeltine Residential Development	Development Agency
Modish Designs and Boutique	Shopping/Design	2b Fiber Optic	Utility Provider
Buffalo Ridge Brewing	Brewery	Falls Beauty Wigs	Beauty Provider
Kinzley Funeral Chapel	Funeral Home	West Pointe Townhomes (Sioux Falls)	Residential Provider
Sideline Diesel	Automotive	Westside Lutheran Church	Church
South Bar	Bar/Restaurant	Robinson Construction Group	Contractor
Toy Storage Etc.	Storage	360 Builders	Building Contractor
Hartford Mini Storage	Storage	Landa Plastering and Stone	Contractor
A & C Child Care, LLC	Daycare	Paraclete Solutions	Electrician Contractor
Hartford's Best Paint and Body	Automotive	Sioux Commercial Cleaning	Cleaning Service
Turtle Creek Park	Recreation	Osher Lifelong Learning Institute USD	School
Novus Auto Glass	Automotive	USD Science and Technology	School
Hartford Area Fire and Rescue	Emergency Services	Home Federal Bank	Bank
Creekside Meats	Grocery Store	Prairie Family Business Association	School
Hartford Area Chamber of commerce	Public Services	Walmart	Shopping/Grocery Store
Hartford Senior Citizens	Senior Center	Subway (Sioux Falls)	Restaurant

Name	Business Type	Name	Business Type
Joshua's Coffee House	Coffee Shop	Style Hair Salon	Salon
U.S. Bank Hartford Branch	Bank	Starbucks	Coffee Shop
American Legion	Legion	Jimmy John's	Restaurant
Laura Tjepkes Photography	Photographer	BP Gas Station	Gas Station
Golden West Telecommunications	Utility Provider	Northstar Grill and Pub	Restaurant
Hartford Library	Library	Dakota Lions Sight and Health	Non-profit Organization
Saint Ann and Saint George	Church	Dakota Digital	Electronic Parts Supplier
Miller Funeral Home	Funeral Home	Automatic Building Controls	Fire Alarm Supplier
Hartford Ace Hardware	Hardware Store	Glanbia Nutritionals	Nutrition
Tammen Auto and tire	Automotive	Forum Communications	Commercial Printer
Westpointe Townhomes	Apartments	Worthing Ag Parts	Agricultural Supplier
Dairy Queen	Restaurant	SpeeDee Delivery	Delivery/Shipping
St. George Cemetery	Cemetery	Titan Machinery	Farm Equipment
Haensel's Distributing Company	Retail Supply Store	Glow Aesthetics Med Spa	Spa Services
Zacharia's Construction	Aggregate Materials	Tinner's Public House	Bar & Grill
ALDI	Grocery Store		

A review of USFWS easements was conducted. Although there are easements present in the NEPA Study Area, no easements were present within the Project Study Area at the time of the writing of this document. The Voelker I WPA, owned in fee title by the USFWS, is located south of SD 38 in Section 14, Township 102 North, Range 52 West, east of Humboldt.

Future Land Use

As development continues in the area, land use will transition from rural to urban. The Minnehaha County 2035 Future Land Use Map anticipates that transition areas in Minnehaha County would have the primary purpose of maintaining the rural landscape until the eventual development of residential and/or municipal development (Minnehaha County 2015). The transition areas extend out from Sioux Falls, Hartford, and Harrisburg within the NEPA Study Area. The 2020 Census recorded a population of 197,214 and the 2024 estimated population of the coutny is 213,824. Large scale farming will still be permitted, but additional consideration should be given to types of agriculture such as large, concentrated animal feeding operations and agribusinesses to ensure that large investments are not made in areas of impeding development (Minnehaha County 2015).

The Sioux Falls MPO boundary displays two growth areas, Sioux Falls and Hartford, within the NEPA Study Area. Transportation and availability of utilities have significant effects on growth. Within the Sioux Falls Growth Area, Shape Sioux Falls (2016) noted the area as transition from agricultural to urban. This transition has started to occur with construction of residential, commercial, and industrial areas. The interstate exit for Hartford is a prime location for business development due to the ease of access and close proximity to Sioux Falls (Minnehaha County 2015). Recreation and conservation zoned areas are planned for the future along Skunk Creek, south of SD 38 (Minnehaha County 2012). Future land use, development areas and growth areas are shown in **Figure 6**.

Hartford is starting to grow to the east, but elevations of the existing sanitary sewer collection system will not allow further expansion due to the existing topography (City of Hartford 2017). The Hartford Future Land Use map indicates development of commercial, industrial, parks and open space, and residential/rural growth areas surrounding Hartford (City of Hartford 2017). The Hartford WWTF is

under construction southwest of the SD 38 and I-90 interchange in Section 25, Township 102 North, Range 51 West. The WWTF will include, sewage lagoons, manholes, outlet pipes and influent force main crossing north across I-90. Future land use, development areas and growth areas are shown in **Figure 6**.

Humboldt's comprehensive plan contains a growth management strategy composed of goals and objectives. The goals and objectives encourage development and redevelopment within the existing city limits, direct new growth into designated future growth areas, construct and upgrade the major street system to handle new growth, improve community services for all residents of Humboldt, and preserve the function and character of the rural area (City of Humboldt 2003). The City of Humboldt's Future Land Use Map displays the development of residential growth areas, commercial areas, and industrial growth areas. Future land use, development areas and growth areas are shown in **Figure 6**.

Next Steps

The No Build Alternative is not consistent with land use plans; the acceptable LOS within the SD 38 corridor would not be maintained.

Development would be dependent upon the availability of utilities, resulting in a shift to urban land use resulting in higher traffic volumes. From this initial screening, Alternative 3 for the mainline corridor improvements and interchange improvements is consistent with the land use and economic growth in the area. Each project identified from the alternatives pulled forward for the mainline and interchange would be reviewed to determine if consistent with land use plans and economic growth patterns.

Construction of identified projects would cause traffic disruptions to residences and businesses along the corridor. Since there are no other means of access other than by SD 38, access to businesses and residences along the corridor would need to be considered during preliminary and final design. Businesses and residents along the route should be notified about construction activities in advance.

COMMUNITY AND SOCIAL RESOURCES

Transportation provides mobility and access for the daily activities of a community. As such, major changes to the transportation system may affect the various aspects of a community. The magnitude of the projected change is evaluated for each of the following social characteristics: population, public services and facilities, community character and cohesion, and traffic circulation.

Methodology

A desktop review and field reconnaissance were conducted to review the communities and resources present within the communities. In addition, the Sioux Falls traffic model and traffic analysis completed for the study were reviewed. A review of the traffic patterns for school districts, recreational areas, churches, emergency services, and rural residential areas was completed. A review for community cohesion was completed and considered the changes that would be beneficial or adverse such as splitting neighborhoods, generating new development, or separating residents from community facilities.

Existing Conditions

The majority of the population in Minnehaha County is concentrated in Sioux Falls, with over 90 percent of the total county population residing in the municipality. In a 2015 planning document, *Moving*

Forward, Planning Ahead, Envision 2035, it was projected that by the year 2035, the population of Minnehaha County would grow over 207,000; the projected population in 2024 is over 217,000. (Minnehaha County 2015). Between the years 2000 and 2010, Hartford had a population growth of 37 percent, growing from 1,844 to 2,534 with a population of 2,965 in 2015 (City of Hartford 2017), and a population of 3,359 in 2020, a 32.5 percent growth. Population growth in Hartford is the result of natural increase and net in-migration. Net in-migration occurs with the number of people moving into the community is larger than those leaving. Humboldt's population increased 11.3 percent from 1990 to 2000 from approximately 468 to 521 residents and is projected to have a population between 613 and 654 by the year 2025 (City of Humboldt 2003).

The NEPA Study Area crosses two school districts: the Sioux Falls School District and the West Central School District which encompasses Hartford, Humboldt, and the surrounding rural communities. The SD 38 corridor provides bus transportation routes for students of each district. The corridor also provides access for other public services such as emergency response vehicles, fire departments and police. Minnehaha County is served by thirteen volunteer fire departments and one full-time fire department within Sioux Falls (Minnehaha County 2015). Both Hartford and Humboldt have fire departments that serve the towns and rural communities. The City of Humboldt contracts with the Minnehaha County Sheriff's Office for its police services (Town of Humboldt 2023). The Minnehaha County Sheriff's office covers Minnehaha County including city limits where the individual cities do not maintain their own police services. The City of Hartford has its own police department that covers the Hartford city limits and the Sioux Falls Police Department covers the area within the Sioux Falls city limits.

SD 38 provides connectivity between the three municipalities of Hartford, Humboldt, and Sioux Falls, and direct access to several rural residential communities and destinations. Between Hartford and Sioux Falls there are two residential communities with direct access from SD 38 that do not associate with either city; the Hartford Heights Addition and Songbird Acres Addition. The Central Valley Golf Course lies in northeast Hartford directly adjacent to SD 38. A recreational racetrack, the I-90 Speedway, is accessed directly off SD 38 between Hartford and Humboldt. SD 38 also provides indirect access to recreational opportunities including city parks, baseball fields, and nature trails in both Hartford and Humboldt.

Next Steps

The No Build Alternative would not address the future decrease in LOS, therefore traffic would experience delays and increase safety concerns. The No Build Alternative would affect the connectivity of the communities and direct and indirect access to residential, business, and commercial areas.

Alternative 3 provides intersection improvements along the SD 38 corridor. Traffic numbers are projected to increase, and the proposed alignment would include but is not limited to additional lanes and roadway reconfigurations that will allow for a perpendicular entrance onto SD 38. A median would need to be incorporated for safety. The addition of lanes with a raised median may have a moderate effect to the traveling public due to the potential inability to directly drive in a wanted direction; a raised median may prohibit this action, forcing a commute to the next available turn-around intersection. However, the lanes, median, and perpendicular entrances would improve safety and accommodate traffic, having a benefit to the community and the traveling public. Alternative 3 would need to be evaluated with current social conditions and community settings.

The preferred interchange options allow for intersection configurations that would allow for a safer entrance onto SD 38 from I-90. Options for the interchange improvements adjust the lengths and skews of the interchange ramps for ease of use for vehicles using the interchange. The preferred options for the interchange improvement would need to be evaluated with current social conditions and community

settings.

TITLE VI/ENVIRONMENTAL JUSTICE

In compliance with EO 12898, SDDOT is required to reach out to minority and low-income populations with meaningful and expanded processes during transportation projects funded by FHWA. This EO requires federal agencies to achieve environmental justice by identifying and addressing disproportionately high and adverse human health or environmental effects, including the interrelated social and economic effects of their programs, policies, and activities, on minority populations and low-income populations in the United States.

Methodology

The methodology for this study addressed the methods for determining minority, people in poverty, vulnerable age, and Limited English Proficiency (LEP) populations. In accordance with U.S. Department of Transportation (DOT) Order 5610.2(A) and FHWA Order 6640.23A, a minority is defined as:

- Black: a person having origins in any of the black racial groups of Africa;
- Hispanic or Latino: a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race;
- Asian American: a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent;
- American Indian and Alaskan Native: a person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through tribal affiliation or community recognition; or
- Native Hawaiian and Other Pacific Islander: a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands (FHWA June 14, 2012).

DOT and FHWA do not define children or elderly; the U.S. Census definitions of children and elderly are used in this study. Children are defined as age 17 years and under; elderly are defined as age 65 years and above.

DOT and FHWA define low-income as:

- A person whose median household income is at or below the Department of Health and Human Services (HSS) poverty guidelines. Poverty guidelines are a simplification of the poverty thresholds for administrative purposes—for instance, determining financial eligibility for certain federal programs. Poverty thresholds are used mainly for statistical purposes—for instance, preparing estimates of the number of Americans in poverty each year. Poverty population data are calculated using the poverty thresholds, not the guidelines.
- A low-income population is defined as any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed and transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed FHWA program, policy, or activity (FHWA June 14, 2012).

DOT defines LEP as individuals for whom English is not their primary language who have a limited ability to read, write, speak, or understand English.

The scale of the U.S. Census Bureau cartographic boundary files for which demographic and socioeconomic data are tracked allows for a two-tiered approach to the analysis at various scales. The 2020 Decennial U.S. Census was analyzed to determine the characteristics (minority, and age) of the

population in NEPA Study Area. Data were analyzed to the smallest geographic unit available, the Census block, for minorities and vulnerable ages. The U.S. Census block boundaries are generally small and confined to neighborhoods, and for this reason, the level of analysis for minority and vulnerable age populations was focused on just those census blocks near the NEPA Study Area.

The American Community Survey (ACS), an ongoing survey conducted by the U.S. Census Bureau, compiles income and language data annually. The smallest geographical unit available for ACS data is the Census block group. Data for income were collected for the Project Study Area using 5-year averages (2016 to 2020) at the block group level while LEP household data were gathered at census tract geographic units.

In accordance with FHWA Order 6640.23A, any readily identifiable group of minority or low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed FHWA program, policy, or activity were identified. The population characteristics (minority, age, language spoken, and income) of the NEPA Study Area were compared to the characteristics of Minnehaha County to determine if there are substantial populations of minority, vulnerable age, LEP, or low-income residents.

FHWA defines a disproportionately high and adverse effect on minority and/or low-income populations as an adverse effect that:

- is predominately borne by a minority population and/or a low-income population, or
- would be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that would be suffered by the non-minority population and/or non-low-income population (FHWA, June 14, 2012).

FHWA Order 6640.23A does not define “any readily identifiable group.” Guidance developed by the Council on Environmental Quality (CEQ), who along with the US Environmental Protection Agency (EPA), has oversight responsibility for implementing EO 12898, identifies a minority and people in poverty populations when:

- The percentage of minorities or low-income residents, respectively, exceeds 50 percent of the population in the area affected by the Project, or
- The minority population percentage of the affected area is meaningfully (or substantially) greater than the minority population percentage in the general population or other appropriate unit of geographic analysis (CEQ, December 10, 1997).

FHWA Order 6640.23A and other FHWA guidance do not use the term “meaningfully greater.” FHWA only uses the term “readily identifiable group” with regard to identifying a minority and/or low-income population. Based on CEQ and FHWA guidance, a two-step process was used to identify minority, low-income, and/or vulnerable age populations in the NEPA Study Area:

- Minority, low-income, and vulnerable age populations were initially evaluated to determine if the percentage of the population in the NEPA Study Area exceeds 50 percent of the total population.
- Minority, low-income, and vulnerable age populations were also evaluated by comparing their percentage in the NEPA Study Area to the percentage in Minnehaha County to determine if the minority, low-income, and/or vulnerable age populations in the NEPA Study Area are high and/or disproportionately greater than the same populations in the surrounding region. The NEPA Study Area was further analyzed at the Census block group and block levels to determine the distribution of any minority, low-income, and vulnerable age populations within the NEPA Study Area. Census block groups and blocks were determined to contain “substantial” minority, low-income, and vulnerable age populations if any of these populations

exhibited concentrations that were at least 40 percent higher than Minnehaha County's percentage of the same minority, low-income, and vulnerable age population. A 40 percent threshold represents a rounded value that is approximately the population within one standard deviation (34 percent) from the mean of a typical normal bell shape distribution curve.

Existing Conditions

Based on the U.S. Census blocks, 11,780 people lived in the U.S. Census blocks that intersect the NEPA Study Area in 2020 (USCB 2022). This estimate includes all people living within the Census block boundaries that intersect the NEPA Study Area, including adjacent neighborhoods to the Project that lie outside the NEPA Study Area boundary. Refer to **Table 13**.

Following the previously noted two-step process, no environmental justice or Title IV populations were present above 50 percent of the total populations. Environmental justice or Title IV populations were also not present above the 40 percent threshold in comparison to Minnehaha County. There were no meaningful or substantial populations of low-income, minority, age related, or below poverty populations identified within the NEPA Study Area.

Next Steps

The No Build Alternative would have no effect on environmental justice.

Currently, there are no meaningful or substantial environmental justice populations within the NEPA Study Area based off the 2020 census information. If a project occurs in the future and the new decennial census information of 2030 can be utilized, the presence of environmental justice populations should be reviewed. Otherwise, no further next steps are recommended.

Table 13. Census Data Comparisons

Census Parameter	Minnehaha County[1]	Threshold to Determine Population	NEPA Study Area[2,3]
Population	199,685	-	11,780
White	85.3%	-	90.4%
Hispanic/Latino	5.6%	7.8%	0.3%
Black/African American	6.6%	9.2%	0.02%
Asian	2.2%	3.1%	0.005%
American Indian/ Alaskan Native	3.1%	4.3%	0.1%
Persons in Poverty	9.5%	13.3%	1.9%
Language other than English Spoken at Home	9.3%	13.0%	1.6%
Under Age 5	7.1%	9.9%	7.5%
Over Age 65	13.7%	19.2%	11.8%

Census Block Group 1 – Tract 103, Group 2 – Tract 103, Group 3 – Tract 103, Group 4 – Tract 103, Group 1 – Tract 104.06, Group 2 – Tract 104.04, Group 3 – Tract 104.05

[1] USCB 2021 - Quick Facts - Minnehaha County

[2] USBC 2022- 2020 Decennial Information

[3] ACS 2016 to 2020

CLIMATE CHANGE/EQUITY

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. Extreme weather or environmental conditions can pose threats to transportation infrastructure and those that depend on it by damaging infrastructure, disrupting transportation services, and creating safety risks for travelers. Temperature changes can cause pavement buckling, and increased rainfall intensity can lead to flooding, erosion, and slide events that damage transportation infrastructure. Climate related changes can result in increased costs, decreased efficiencies, and reduced reliability of transportation services. Sustainability of transportation infrastructure addresses the current needs in consideration of future needs by balancing economic, environmental, and social values.

The EO on Advancing Racial Equity and Support for Underserved Communities Through the Federal Government (EO 13985) pursues a comprehensive approach to advancing equity for all, including individuals who have been historically underserved and adversely affected by persistent poverty or income inequality. An important area for focus is the disproportionate, adverse safety impacts that affect certain groups on our roadways.

Methodology

Climatic variation was reviewed from available weather information from the National Oceanic and Atmospheric Administration (NOAA).

The determined environmental justice populations within the NEPA Study Area were reviewed in comparison to the climatic variation, and any notable patterns in extreme weather events which are indicative of climatic change.

Existing Conditions

Weather, particularly precipitation, in the NEPA Study Area was reviewed. NOAA collects totals for inches of annual precipitation for Minnehaha County. In 2019, Minnehaha County recorded a record year for annual precipitation totaling 40.47 inches since 1895 (NOAA 2023). This led to a large-scale flooding that damaged residential homes and other property. Another high recent precipitation amounts includes 2018 with 37.52 inches (NOAA 2023).

No meaningful or substantial low-income, minority, age-related, or below poverty populations are present within the NEPA Study Area.

Next Steps

The No Build Alternative would likely cause negative effects to the corridor due to climate change. Infrastructure would continue to age and be affected by extreme weather events, temperature fluctuations, and other climate related factors. Maintenance costs would likely rise as repairs to the aging infrastructure are completed.

To address potential issues caused by climate change, SDDOT can integrate climate change considerations into planning, design, construction, and maintenance practices. Infrastructure can be designed with climate resilience in mind, including utilization of materials and construction techniques that can withstand extreme weather conditions and temperature fluctuations. Regular maintenance and monitoring could be conducted to address climate-related damage in a timely manner, focusing on adequate drainage systems, erosion prevention, and pavement repairs. By incorporating climate

change considerations, SDDOT can build more resilient infrastructure, improve the safety and reliability of transportation systems, and mitigate the adverse impacts of climate change on mobility and connectivity.

The No Build Alternative will have no impact on equity.

Currently, there are no meaningful or substantial environmental justice populations within the NEPA Study Area based off the 2020 census information. If a specific project extends into the new decennial census information of 2030, then the presence of environmental justice populations should be reviewed. Otherwise, no further next steps are recommended.

BICYCLE AND PEDESTRIAN FACILITIES

Bicycle and pedestrian facilities are important components in a community's transportation infrastructure. Promoting development of facilities for use by pedestrians and bicycles is important for consideration during transportation planning. Existing and planned bicycle and pedestrian facilities are summarized in this section.

Methodology

A desktop review was conducted to identify existing pedestrian and bicycle facilities located within the NEPA Study Area and to determine the locations of existing sidewalks, pedestrian bridges, footpaths, bike routes, and designated trails. A review of planning documents was also completed to identify what areas are designated currently and in the future for bicyclists and pedestrian use. Planning documents reviewed included: Sioux Falls Bike Plan 2015, Hartford Comprehensive Plan 2017 - 2037, Humboldt Comprehensive Plan 2003 – 2025, and Sioux Falls Metropolitan Planning Organization (MPO) Bicycle Plan.

Existing Conditions

Due to the primarily rural nature of the Project Study Area, paved and/or gravel shoulders serve as the primary opportunities for multi-modal users. SD 38 is identified to have decent pavement condition with approximately a 6-foot shoulder width from Hartford to SD 115. The on-street bike route is accommodating bicycle and pedestrian uses and was identified in the Sioux Falls MPO Bicycle Plan as providing connectivity from Hartford to Sioux Falls. Bike trails that parallel or intersect SD 38 are in the long-term, future trail category in the Sioux Falls Bike Plan. These trails are considered high-connectivity, low-comfort routes, due to the adequate, yet minimal shoulder width for users along a high-speed roadway (SFBP 2015). The following documents noted bicyclist and pedestrian trails:

- **Hartford Comprehensive Plan Parks and Open Space Map**. Within the Project Study Area, the plan and map discuss and display planning for future primary and secondary paths. This plan recommends expanding the existing bike path with consideration toward connection with the Sioux Falls System (City of Hartford 2017).
- **Humboldt Comprehensive Plan, Major Street Plan Map**. The plan and map discuss and display planning for future bike trails. In the southeast designated growth area of Humboldt, the implementation of a bike trail system along Interstate-90 is planned to act as a buffer between the interstate and residential development (City of Humboldt 2003).
- **MPO Bicycle Plan**. A future path was noted within the Project Study Area, exploring a bicycle trail connection from Hartford to the edge of Sioux Falls at either the west corridor, along Skunk Creek, or along another similar corridor (SFBP 2015).

Recommendations of the Sioux Falls MPO include roadway projects along SD 38 to improve bicycle and pedestrian accessibility between Sioux Falls and Hartford. Potential project locations include along Western Avenue from Mickelson Road to SD38, Western Avenue from SD38 to 258th Street, and a section line corridor next to the Sam Assam Development MPO, routing ¾ mile south of SD 38 (MPO 2020).

Next Steps

The No Build Alternative would affect bicycle and pedestrian users along the corridor. As traffic levels increase, users of the SD 38 shoulder for biking or walking would experience a lower comfort route than currently exists. However, if warranted, bicycle and pedestrian facilities could be constructed independently of a project stemming from this corridor study.

As projects from Alternative 3 and the I-90 Exit 390 Interchange Options proceed, the need for and future of recreational bicycle and pedestrian trail systems would be considered and be consistent with planning documents to the extent possible. Any accommodation for pedestrian and bicycle connectivity would be considered and finalized in future projects.

VISUAL RESOURCES AND AESTHETICS

Visual resources are the natural and cultural features of the landscape that define its aesthetic quality and form the overall impression, or visual character, of an area. Visual impacts can generally be defined in terms of the relationship between the area's physical characteristics, the presence and location of viewers, and the character and quality of the environment in which a project is located.

Methodology

The Project Study Area was reviewed during the field reconnaissance for the characteristics of the viewshed for the SD 38 corridor. The reconnaissance noted land uses and the following landscape features that add to the visual character of the area:

- Residential (urban, suburban, rural) uses
- Commercial, industrial, and municipal uses
- Parks, recreational areas, and trails
- Water and natural resources
- Agricultural open space and undeveloped lands

Existing Conditions

The NEPA and Project Study Areas overall occur in a largely rural area with agricultural uses dominating the landscape. The NEPA Study Area viewshed includes the SD 38 corridor and connecting roadways, residential areas including Humboldt, Hartford, and rural farmsteads, farm operations, and hobby farms. The landscape within the Project Study Area is primarily the SD 38 corridor, which traverses both urban and rural settings, passing rural residences and farmsteads with urbanization near the cities of such as Hartford, Humboldt, and Sioux Falls. Business and commercial areas are present within Hartford, Humboldt, Sioux Falls. One pedestrian trail is present along the north side of SD 38 between the Hartford Heights Addition and the City of Hartford. Additional pedestrian paths and sidewalks are present within the city limits of Hartford, Humboldt, and Sioux Falls.

Next Steps

The No Build Alternative would have no effect on visual resources or aesthetics in the Project Study Area.

The visual character of the Project Study Area would experience negligible effects from Alternative 3 and the selected I-90 Exit 390 Interchange option since the SD 38 corridor is currently part of the viewshed. Changes to the visual resources along the SD 38 corridor would consist of modifications to the existing roadway and interchange. Overall, effects to the viewshed would be negligible. No additional visual resource analysis is needed for upcoming projects.

PRIME AND UNIQUE FARMLANDS

Protecting farmland from conversion from agricultural use during the planning, construction, and maintenance of transportation projects is an important step in complying with the provisions of 7 CFR 658 et seq. Farmland Protection Policy Act (FPPA). In accordance with the FPPA, important farmland includes all land that is defined as prime, unique, or farmlands of statewide or local importance based on soil types. SDDOT identifies important farmland from currently published or interim soil survey maps and data produced and certified by the NRCS National Cooperative Soil Survey Program.

Methodology

The NRCS Web Soil Survey was utilized to identify types of soil within the Project Study Area, including prime, unique, and statewide and locally important farmlands (NRCS 2023a).

Existing Conditions

Multiple soil types exist within the Project Study Area. Refer to **Table 14** below for the soil name, acreage within the Project Study Area, and farmland designation (NRCS 2022b).

Table 14. Soil Types and Farmland Designations within the Project Study Area

Soil Map Unit Symbol, Name, and Slope	Acres in Study Area	Farmland Designation*
AcA – Alcester silty clay loam, 0 to 2 percent slopes	0.5	PF
Ba – Baltic silty clay loam, 0 to 1 percent slopes	14.1	None
Bb – Baltic silty clay loam, ponded	1.6	None
BeE – Betts-Ethan loams, 15 to 40 percent slopes	8.8	None
Cb – Chancellor silty clay loam, 0 to 2 percent slopes, frequently flooded	2.2	PF/D
Cc – Chancellor-Tetonka complex, 0 to 2 percent slopes	34.1	PF/D
Ch – Chaska loam, channeled, 0 to 3 percent slopes, frequently flooded	25.2	None
CsD – Crofton-Shindler complex, 9 to 15 percent slopes	12.1	None
Dd – Davison-Crossplain clay loams, 0 to 2 percent slopes	48.7	PF/D
DgC – Delmont-Talmo complex, 6 to 9 percent slopes	4.9	None
DmA – Dempster silt loam, 0 to 2 percent slopes	14.3	PF
DtB – Dempster-Talmo complex, 2 to 6 percent slopes	20.7	None
EaB – Egan-Ethan complex, 2 to 6 percent slopes	0.7	PF
EeB – Egan-Ethan-Trent complex, 1 to 6 percent slopes	204.9	PF
EfA – Egan-Trent silty clay loams, 0 to 2 percent slopes	12.0	PF
EgB – Egan-Wentworth-Trent complex, 2 to 6 percent slopes	30.6	PF
EtD – Ethan-Clamo loams, 9 to 15 percent slopes	23.7	None
EuC – Ethan-Egan complex, 6 to 9 percent slopes	112.8	SI

Soil Map Unit Symbol, Name, and Slope	Acres in Study Area	Farmland Designation*
HuA – Huntimer silty clay loam, 0 to 2 percent slopes	0.0	PF
La – Lamo silty clay loam, cool, 0 to 2 percent slopes	19.8	PF/D
Lb – Lamo silty clay loam, channeled	24.5	None
MnB – Moody-Nora complex, 2 to 6 percent slopes	131.3	PF
NcC – Nora-Crofton complex, 6 to 9 percent slopes	89.9	SI
Or – Orthents, loamy	2.4	None
SsF – Steinauer-Shindler clay loams, 25 to 60 percent slopes	1.0	None
TdE – Talmo-Delmont complex, 15 to 40 percent slopes	1.4	None
Tr – Trent silty clay loam, 0 to 3 percent slopes	3.3	PF
W – Water	1.7	None
Wa – Wakonda-Chancellor complex, 0 to 2 percent slopes	4.4	PF/D
WcA – Wentworth-Chancellor-Wakonda silty clay loams, 0 to 2 percent slopes	2.4	PF
WhA – Wentworth-Trent complex, 0 to 2 percent slopes	12.4	PF
Wk – Whitewood silty clay loam, 0 to 2 percent slopes, occasionally flooded	8.9	PF/D
Wo – Worthing silty clay loam, 0 to 1 percent slopes	6.8	None
Wr – Worthing-Davison complex, 0 to 2 percent slopes	21.0	None
Total Acreage	**903.1**	

*PF=Prime Farmland, PF/D=Prime Farmland if Drained, PF/I=Prime Farmland if Irrigated, SI=Farmland of Statewide Importance

Next Steps

The No Build Alternative will have no impacts on prime and unique farmlands.

Alternative 3 and the preferred improvements under the I-90 Exit 390 Interchange Options may impact prime farmland if ROW is needed. As the identified projects progress, the NRCS should be consulted to determine permanent impacts to soils with farmland designations. If needed, Form AD-1006, *Farmland Conversion Impact Rating*, would be completed for the specific project.

AIR QUALITY

Protecting air quality in the planning, construction, and maintenance of transportation projects is an important step in complying with provisions of 42 USC 7401 et seq., the Clean Air Act (CAA). The SDDANR Air Quality Program is responsible for maintaining air quality levels in South Dakota. It is responsible for air quality levels that protect human health, safety and welfare, and the National Ambient Air Quality Standards (NAAQS) established through the CAA.

Methodology

The most recent air quality assessment report (SDDANR 2020) was reviewed for levels of concern for particulate matter, ozone, nitrogen dioxide, lead, and carbon monoxide.

Existing Conditions

Currently, background levels of all assessed factors are within the CAA parameters; all of South Dakota is in attainment with CAA standards.

Next Steps

The No Build Alternative would have no impact on air quality.

Projects stemming from Alternative 3 and the preferred improvements under the I-90 Exit 390 Interchange Options are not anticipated to permanently impact air quality. The Project would be expected to have temporary local impacts to particulate levels (dust) during construction. Project specific analysis is not recommended due to the negligible effect to air quality.

HAZARDOUS MATERIALS

Hazardous materials include substances or materials that have been determined by the EPA to be capable of posing an unreasonable risk to health, safety, or property. Hazardous materials may exist within the study area at facilities that generate, store, or dispose of these substances, or at locations of past releases of these substances. Examples of hazardous materials include asbestos, lead-based paint, heavy metals, dry-cleaning solvents, and petroleum hydrocarbons (e.g., gasoline and diesel fuels), all of which could be harmful to human health and the environment.

Methodology

The SDDANR Tanks, Spills, and Environmental Events Map database was reviewed for registered aboveground and underground storage tanks, reported spill events, and any documented environmental events that may pose a risk or threat to the environment (SDDANR 2022).

Existing Conditions

Twelve reported spill events were identified within the Project Study Area (SDDANR 2024). All reported spill events within the Project Study Area were either closed or have been assigned a “no further action” status.

Four active underground storage tanks are located within the Project Study Area (SDDANR 2024). One is located southwest of the intersection of SD38 and 457th Avenue/S. Ford Street in Humboldt at the former Town N’ Country gas station. Two active underground storage tanks are located within the City of Hartford; one at the Get N Go gas station and one at the Heart T Stop. The fourth active storage tank is located at the Buffalo Ridge Country Store.

The SDDANR Tanks, Spills and Environmental Events interactive map identified no above ground storage tanks, Tier I facilities, or Tier II facilities within the Project Study Area.

Next Steps

The No Build Alternative will have no impact on hazardous materials.

Alternative 3 and the preferred improvements under the I-90 Exit 390 Interchange Options would largely utilize existing ROW and minimize soil disturbance to the extent necessary, thereby minimizing the potential for encountering hazardous materials.

Based on information currently available, projects that stem from this study would not likely impact or be impacted by hazardous materials. As future projects progress, an updated review of the SDDANR Tanks, Spills, and Environmental Events Map is recommended, along with SDDANR agency

coordination.

NOISE

Noise from highway traffic and construction is an important environmental consideration in transportation projects. SDDOT applies 23 CFR 772 for noise analysis and abatement procedures.

Highway projects fall into three types in accordance with the SDDOT Noise and Analysis Abatement Guidance (SDDOT 2011):

- Type I projects are defined as federal-aid highway projects in a new location or the physical alteration of an existing highway that significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes. Type I projects can also include new or altered weigh stations, rest stops, ride-share lots, or toll plazas. Noise analysis is not required for the No Build Alternative or other eliminated alternatives.

- Type II projects are defined as federal-aid highway projects for noise abatement on an existing highway. For a Type II project to be eligible for Federal-aid funding, the highway agency must develop and implement a Type II program in accordance with section 772. 7I. Type II programs are voluntary, and SDDOT has elected not to have a Type II program.

- Type III projects are defined as federal-aid highway projects that do not meet the classifications of a Type I or Type II project. Type III projects do not require a noise analysis.

Methodology

For the purposes of this Environmental Screening Report, a full noise analysis study was not completed. A review to determine if an alternative would have additional through lanes or substantial horizontal or vertical alterations would be conducted as future projects are determined. If an alternative does have those components, then the proximity of the roadway alteration to noise receptors would be analyzed. A noise receptor is a discrete or representative location of a noise sensitive area. A substantial horizontal alteration is defined as one that halves the distance between the edge of the outermost through-traffic lane and the closest receptor between the existing condition and the future build condition. A substantial vertical alteration removes shielding, thereby exposing the line-of-site between the receptor and the traffic noise source (SDDOT 2011).

Existing Conditions

Noise receptors within the Project Study Area include the residences and businesses within Humboldt and Hartford, farmsteads, rural residences, and developments along the SD 38 Corridor. Refer to **Appendix B** for specific receptor locations.

Next Steps

Generally, a noise analysis is required for proposed projects that would physically alter an existing highway or increase the number of through-traffic lanes. If traffic noise impacts are identified and projected to increase with the incorporation of a future project in the study area, noise abatement measures may need to be evaluated for affected noise receptors.

The current design of Alternative 3 is not anticipated to require a noise analysis, either due to lack of

receptors or due to the distance of the proposed improvement not being half of the current distance to receptors. The preferred improvement of the I-90 Exit 390 Interchange Options include horizontal alteration of SD 38 at the I-90 interchange thus resulting in halving the distance to residential receptors. As projects move forward, the need for a noise analysis would be considered for each intersection and the proposed improvements to the I-90 interchange.

RIGHT-OF-WAY, ACQUISITION, AND RELOCATION POTENTIAL

The potential for Right-of-Way (ROW), acquisition, and relocation impacts are described in this section to evaluate how property owners and tenants (e.g., residential, business, non-profit, farm, ranch) may be directly and indirectly impacted by proposed ROW acquisition and associated business and residential displacements and relocations. The impacts may occur as a result of acquisition of specific businesses and residences or through disruption of business activity and neighborhood/community interaction characteristics that result in relocations.

Methodology

While specific ROW acquisitions or relocations are not finalized during this study, a desktop review was conducted to identify the existing ROW extents in comparison to the proposed improvements.

Existing Conditions

The SD 38 transportation corridor has an existing ROW throughout the Project Study Area. The typical width of the ROW along SD 38 ranges from approximately 100-200 feet on each side of the roadway. Portions of the ROW may exceed 200 feet in locations of large intersections and at the I-90 interchange. I-90 also has an existing ROW in which distances were unknown during the writing of this screening report. It is important to note that the location of fences, or other physical features on property boundaries may not determine the exact location of the ROW.

Next Steps

Alternative 3 and preferred improvements under the I-90 Exit 390 Interchange Options would require the acquisition of property within mainly agricultural land, pasture or row crops, and residences. Although the alternatives are anticipated to mostly be within the existing ROW acquisition is anticipated throughout the corridor. ROW acquisition amounts would later be determined during project design and development.

All ROW and relocation impacts would be mitigated in conformance with the Uniform Relocation Assistance and Real Property Acquisition Act (UA) of 1970, as amended by the Surface Transportation Assistance Act of 1987, and as codified in 49 Code of Federal Regulations (CFR) 24, effective April 1989. The SDDOT ROW program is responsible for acquiring the property necessary for highway purposes and performing services related to acquisition in accordance with the UA.

UTILITIES

Aboveground and buried utilities within the Project Study Area are outlined in this section.

Methodology

A field reconnaissance and desktop review were conducted to identify existing utilities in the area including, but not limited to, electric, gas, water, communication, and petroleum.

Existing Conditions

There are multiple utility companies and associated infrastructure along, under, and above SD 38 and adjacent county roads. Minnehaha County is traversed by high voltage transmission lines and liquid/vapor transmission pipelines, including the Dakota Access Pipeline (DAPL), which crosses the Project Study Area 0.3 mile west of the intersection of SD 38 and 460th Avenue. Utility service infrastructure can be associated with the SD 38 ROW, which extends up to 150 feet from the road centerline, and/or other special setback requirements related to utility maintenance and safety (LCCP 2005). Above ground pedestals, poles, junction boxes, and utility markers were observed adjacent to SD 38 throughout the Project Study Area.

Utilities observed in the study area during the field reconnaissance included, but are not limited to:

Brookings Telephone Company – Fiber Optic Cable
CenturyLink – Cable
DAPL-ETCO Operations Management, LLC. – Petroleum Pipeline (Photo Point 26)
East River Electric Power Cooperative – Fiber Optic Cable
Golden West Telecommunications – Fiber Optic Cable
Humboldt Natural Gas Utilities – Natural Gas Pipeline
ITC Telcom – Buried Fiber Route
Lewis & Clark Regional Water System, Inc. – Water Pipeline
MidAmerican Energy – Natural Gas Pipeline
Midcontinent Cable - Fiber Optic Cable
Minnehaha Community Water Corporation – Water Lines and Valves
Northwestern Bell Telephone Company – Underground Cable
Sioux Valley Energy – Power Cable
Sioux Valley Telephone Company – Telephone/Communication
Union Telephone Company – Fiber Optic Cable

Next Steps

The Minnehaha County Planning Department should be contacted prior to any excavation, construction, or improvement activity to ensure that the Project would comply with Minnehaha County ordinance requirements.

Utility coordination would occur as part of the preliminary and final design of the identified projects that are part of Alternative 3 and the preferred improvements under the I-90 Exit 390 Interchange Options.

RAILROAD CROSSINGS

There is one inactive railroad grade within the Project Study Area along SD 38; the tracks have been removed from the grade. The inactive railroad grade crosses SD 38 in Humboldt approximately 0.55 miles west of the Project Study Area. The grade parallels the south side of SD 38 in the Project Study Area until it exits the Project Study Area at 466th Avenue, where it heads south towards Sioux Falls.

Methodology

The Federal Railroad Administration (FRA) maintains an inventory of crossings throughout the U.S. The FRA inventory indicates that there are 283 public and private highway/rail crossings within Minnehaha County (FRA 2023).

Existing Conditions

No railroad crossings exist along SD 38 within the Project Study Area.

Next Steps

The inactive railroad grade is listed as eligible on the NRHP. Measures to avoid impacts to the railroad grade should be implemented as projects progress.

OTHER ISSUES

No other issues were identified during this Environmental Screening Report.

REASONABLY FORESEEABLE EFFECTS

Reasonably foreseeable effects were considered within each resource section. Reasonably foreseeable actions must be advanced enough in the planning process that its implementation is likely. Reasonably foreseeable actions are not speculative, are likely to occur based on reliable sources, and are typically characterized in planning documents. The following are examples of the reasonably foreseeable effects:

- Water Resources - An increase in stormwater runoff may occur with changes to development and would need to be considered during final design. Pipe, culvert, and bridge structure sizing may need to be modified. Areas of floodplain, wetland, and stream corridors exist within the Project corridor and have the potential to be impacted by future improvement projects.
- Threatened or Endangered Species – Suitable habitat for the northern long-eared bat, Topeka shiner, and monarch butterfly exists in the Project Study Area. Coordination with USFWS would need to occur to determine specific project effects to species.
- Cultural Resources - A Level III survey would need to be completed in areas not previously disturbed to identify any historic structures or sites.
- Section 4(f) section notes the possibility of future trails qualifying as Section 4(f) resources; qualification will be dependent upon the progress of the completion of these trails during the timing of the Project.
- Land Use – Development and improvements of the SD 38 corridor would support future development in municipalities such as Hartford, Humbolt, and Sioux Falls. Future development between these municipalities is anticipated to continue due to the existing expansion of industrial, commercial and urban residential areas along the SD 38 corridor. Due to the future development along the SD 38 corridor, conversion of farmland and wildlife habitat could be anticipated. It is also likely that future land use planning and zoning may be reconfigured to accommodate developments and land use throughout the corridor.

SUMMARY OF NEXT STEPS AND MITIGATION STRATEGIES

The following is a list of follow up items that are needed during the NEPA process for each identified project:

- Wetland field delineations
- Approved jurisdictional determination from USACE
- Section 404 permit with a Section 401 State Water Quality Certification
    - Depending upon level of impact, wetland mitigation may be required. Wetland credits would be purchased from a private wetland bank or, if available, debited from the SDDOT Wetland Mitigation Bank
- SDDANR General Permit for Construction Activities
- Coordination with USFWS and SDGFP to determine effects to threatened and endangered species
    - Concurrence of effects to these species is required from USFWS
- Level III Cultural Resources Survey
    - Consultation with SHPO to determine the Project's effect determination
- Identification of Section 4(f) and 6(f) properties
    - Determination of any temporary or permanent use of the properties
- Consideration of access to residences and businesses during final design
- Review of the final design to confirm consistency with land use plans and economic growth patterns
- Consider the need for and future of recreational bicycle and pedestrian trail systems during final design
- Updated review of the SDDANR Tanks, Spills, and Environmental Map database, along with SDDANR agency coordination
- Review the need to complete a noise analysis for intersection at 270th Street
    - If needed, complete analysis according to the SDDOT Noise Policy
- Mitigation of all ROW and relocation impacts in conformance with the Uniform Relocation Assistance and Real Property Acquisition Act (UA) of 1970.

STAKEHOLDER AND PUBLIC INVOLVEMENT

Two public meetings were held for the study and the following describes each.

First Public Meeting- June 8, 2023

The first public meeting and open house was on June 8th, 2023, at the West Central High School in Hartford, SD, 705 E 2nd St, Hartford, SD 57033. Approximately 44 people were in attendance. The public meeting was designed to inform the public about the study and solicit input early in the process. Representatives from SDDOT, FHWA, Minnehaha County, the City of Hartford, City of Humboldt, and personnel from the consultant engineering teams, including HR Green and Banner Associates, Inc., were present. The representatives were available to answer questions, discuss the study, and receive community input on study needs and deficiencies. A looping PowerPoint presentation was available for attendee viewing. A video was made available on the website to provide information and generate questions on design, environmental, right-of-way, and access management which are typical for most highway projects. Comments were made to the Design Team by email, comment cards, website contact form, online survey, and online interactive map. All comments will be reviewed by the Design Team for consideration in the design process.

The meeting was advertised through the study website (https://www.sd38corridorstudy.com/) and through direct mailings to landowners and local officials in and immediately adjacent to the corridor.

A total of 13 comments were received through the interactive map comments, one comment was received through the website, five comments were received through comment cards, and 21 comments were written on the strip map that were displayed at the Public Meeting. The main concern raised in the comments received was the speed, amount of traffic, and safety along SD 38. Comments identified traffic speeds entering Hartford should be reduced as crossing SD 38 or turning onto SD 38 is difficult. Flooding and drainage issues were listed as a concern that it would be ensured residences along the corridor would not be affected. One comment was received regarding wildlife vehicle collisions along SD 38. Other comments regarding safety included discussion on traffic signals, roundabouts, signage, turn lanes, and truck clearance.

Second Public Meeting- March 13th, 2024

The second public meeting and open house was on March 13th, 2024, at the West Central High School in Hartford, SD, 705 E 2nd St, Hartford, SD 57033. Approximately 30 people were in attendance. The public meeting was designed to inform the public about the study and solicit input early in the process. Representatives from SDDOT, FHWA, Minnehaha County, the City of Hartford, City of Humboldt, and personnel from the consultant engineering teams, including HR Green and Banner Associates, Inc., were present. The representatives were available to answer questions, discuss the study, and receive community input on study needs and deficiencies. A looping PowerPoint presentation was available for attendee viewing. A video was made available on the website to provide information and generate questions on design, environmental, right-of-way, and access management which are typical for most highway projects. Comments were made to the Design Team by email, comment cards, website contact form, online survey, and online interactive map. All comments will be reviewed by the Design Team for consideration in the design process.

The meeting was advertised through the study website (https://www.sd38corridorstudy.com/) and through direct mailings to landowners and local officials in and immediately adjacent to the corridor.

Twenty-one comments were received on the interactive map. Five handwritten comments and seven email comments were also received. The main concerns voiced at the public meeting were the median, a need for turn lanes at the racetrack, a speed limit reduction from the high school to the interstate, sight distance issues at the interchange, impacts to private driveways, acquisition of property, impacts to property values, changes in access locations, and impacts to businesses.

Throughout the course of the Project, all correspondence received from both public meetings was reviewed and logged. Comments submitted can be found in **Appendix C**.

CONCLUSION

Alternative 3 and the interchange improvements carried forward under the I-90 Exit 390 Interchange Options met the purpose and need for the Project and were carried forward for environmental analysis within this report. Resources or items of concern were identified within the NEPA Study Area or Project Study Area, depending on which was appropriate for that resource. Both Alternative 3 and the preferred improvements under the I-90 Exit 390 Interchange Options are anticipated to have minimal impacts to environmental resources. Future NEPA documentation would include the next steps identified for compliance as projects move forward.

Due to the minimal impact, the projects identified within Alternative 3 and the selected improvements

carried forward under the I-90 Exit 390 Interchange Options are anticipated to require Categorical Exclusions for NEPA documentation.

REFERENCES

City of Hartford. 2017. Hartford Comprehensive Plan 2017 – 2037. Retrieved December 8, 2022 from: https://www.hartfordsd.us/vertical/sites/%7B0786574D-ED03-4822-A2DF-5DE2E3C986DE%7D/uploads/2017-2037_Hartford_Comp_Plan_Final.pdf

City of Humboldt. 2003. Humboldt Comprehensive Plan 2003 – 2025. Retrieved January 10 from: City of Humboldt Finance Office.

CEQ. December 10, 1997. Environmental Justice Guidance Under the National Environmental Policy Act. https://www.epa.gov/environmentaljustice/ceq-environmental-justice-guidance-under-national-environmental-policy-act. Retrieved August 13, 2022.

CountyOffice.org. 2023. *Golf Courses in Minnehaha County, South Dakota.* Retrieved on January 5, 2023 from: https://www.countyoffice.org/sd-minnehaha-county-golf-course/

eBird, 2022. *Bald Eagle.* Retrieved on December 22, 2022 from: www.ebird.org

Environmental Protection Agency (EPA), 2022a. *EnviroAtlas Interactive Map.* Retrieved on December 23, 2022 from: https://enviroatlas.epa.gov/enviroatlas/interactivemap/

Federal Emergency Management Agency (FEMA), 2023a. FEMA Flood Map Service Center: Search by Address. Retrieved on January 2, 2023 from: https://msc.fema.gov/portal/home

Federal Emergency Management Agency (FEMA), 2023b. Letter of Map Revision (LOMR). Retrieved on January 3, 2023 from: https://www.fema.gov/glossary/letter-map-revision-lomr

Federal Railroad Administration (FRA). 2023. Crossing Inventory by County and ID. Retrieved on February 7, 2023 from: https://railroads.dot.gov/safety-data/crossing-and-inventory-data/crossing-inventory-county-and-id

Federal Highway Administration (FHWA). 2012. FHWA Order 6640.23A, FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. http://www.fhwa.dot.gov/legsregs/directives/orders/664023a.htm. Retrieved August 13, 2022.

GO Sioux Falls. 2020. Metropolitan Planning Organization 2045 Long Range Transportation Plan. Retrieved. December 8, 2022 from: https://siouxfallsmpo.org/files/1616/0504/0635/SiouxFalls_2045_LRTP_FINAL.pdf

Hartford Comprehensive Plan. 2017. Comprehensive Plan for the City of Hartford 2017 – 2037. Retrieved January 18, 2023 from: https://www.hartfordsd.us/vertical/sites/%7B0786574D-ED03-4822-A2DF-5DE2E3C986DE%7D/uploads/2017-2037_Hartford_Comp_Plan_Final.pdf

HR Green. 2023a. SD Highway 38 – Existing Traffic and Operations Analysis. Retrieved March 2, 2023.

HR Green. 2023b. SD Highway 38 – Future No-build Traffic Operations and Safety Analysis. Retrieved May 23, 2023.

Minnehaha County. 2012. Minnehaha County Zoning Map. Retrieved February 8, 2023 from: https://www.minnehahacounty.gov/dept/pl/envision/maps/maps.php

Minnehaha County. 2015. Envision 2035 – Moving Forward, Planning Ahead. Retrieved January 18, 2023 from: https://envision2035.minnehahacounty.org/dept/pl/envision/envision.php

Minnehaha County. 2017. Minnehaha County GIS – MinnEmap – Water Source Protection Overlay District. Retrieved January 3, 2023 from: https://gis.minnehahacounty.org/minnemapviewer/

Minnehaha County Ordinances. 2024. Revised Joint Zoning ordinance for Minnehaha County and the City of Sioux Falls. Retrieved June 20, 2024 from: https://minnweb.minnehahacounty.gov/index.php/home/revised-joint-zoning-ordinance-for-minnehaha-county-and-the-city-of-sioux-falls/#FULL_ORDINANCE_PDF

National Wild and Scenic Rivers System (NWSRS), 2022. *South Dakota.* Retrieved on April 21, 2022 from: https://www.rivers.gov/south-dakota.php

National Oceanic and Atmospheric Administration (NOAA). 2023. National Centers for Environmental Information – Climate at a Glance County Time Series. Retrieved March 22, 2023, from: https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series/SD-099/pcp/ann/9/1895-2023

Natural Resources Conservation Service (NRCS), 2023a. *Web Soil Survey – SD 38 Corridor Study.* Retrieved on January 2, 2023 from: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

Natural Resources Conservation Service (NRCS), 2023b. *Soil Data Access (SDA) Prime and Other Important Farmlands.* Retrieved on January 2, 2023 from: https://efotg.sc.egov.usda.gov/references/Public/NM/Prime_and_other_Important_Farmland.html

Niehus, Colin. 1994. *Major Aquifers in Minnehaha County, South Dakota.* U.S. Geological Survey, Information Pamphlet No. 46. Retrieved on January 3, 2023 from: http://www.sdgs.usd.edu/pubs/pdf/IP-46.pdf

Paleontology Portal. 2023. *South Dakota, US.* Retrieved on January 3, 2023 from: http://paleoportal.org/index.php?globalnav=time_space&sectionnav=state&state_id=40

Sioux Falls Bike Plan (SFBP), 2015. Retrieved on May 5, 2022 from: file:///F:/23643-00/Reports/Draft%20Reports/3_Env_Scan/References/SFBP%202015%20-%20Sioux%20Falls%20Bike%20Plan.pdf

Sioux Falls Metropolitan Planning Organization (MPO), 2020. 2045 Long Range Transportation Plan. Retrieved September 30, 2022 from: https://www.siouxfalls.org/planning-dev/planning/transportation-planning/highlights/bicycle-planning

Shape Sioux Falls. 2016. Shape Sioux Falls 2040 Comprehensive Plan. Retrieved December 8, 2022 from: https://www.siouxfalls.org/planning-dev/planning/comp-plan

South Dakota State Historical Society Archaeological Research Center (SARC). 2023. Class I Record Search for the South Dakota Department of Transportation (SDDOT) SD38 Corridor Planning Study, associated with SDDOT Project HP 5596(24)P, PCN 08LK, Minnehaha County, South Dakota. Retrieved March 14, 2023.

South Dakota Department of Agriculture and Natural Resources (SDDANR) – Air Quality Program, 2020. *South Dakota Ambient Air Monitoring Network 5-Year Assessment of Air Monitoring Sites, 2015-2019.* Retrieved on January 3, 2023 from: https://danr.sd.gov/Environment/AirQuality/AirMonitoring/docs/5YearAssess2020.pdf

South Dakota Department of Agriculture and Natural Resources (SDDANR), 2022. *South Dakota Department of Agriculture and Natural Resources Tanks, Spills, and Environmental Events Map.* Retrieved on December 23, 2022 from: https://apps.sd.gov/NR42InteractiveMap#

South Dakota Department of Game, Fish and Parks (SDGFP), 2016. *State and Federally Listed Threatened, Endangered, and Candidate Species Documented in South Dakota by County. Updated on 07/19/2016.* Retrieved on December 22, 2022 from: https://gfp.sd.gov/userdocs/docs/ThreatenedCountyList.pdf

South Dakota Game, Fish and Parks (SDGFP), 2020. Biennial Commission Review of SD Threatened and Endangered Species List, September 2020 Commission Meeting. Retrieved on December 22, 2020 from: https://gfp.sd.gov/userdocs/docs/te_draft_status_reviews_2020_revision.pdf

South Dakota Department of Game, Fish and Parks (SDGFP), 2022a. *South Dakota Topeka Shiner Range Map.* Received on December 12, 2022 from Chelsey Pasbrig, SDGFP Aquatic Non-Game Biologist.

South Dakota Department of Game, Fish and Parks (SDGFP), 2022b. *South Dakota Environmental Review Tool.* Accessed on January 5, 2023 from: https://ert.gfp.sd.gov/content/map

South Dakota Game, Fish and Parks (SDGFP), 2023. *Coordination with Grants Coordinator – Randy Kittle on Section 6(f) Properties.* Completed October 23, 2023.

South Dakota Department of Transportation (SDDOT), 2011. Noise Analysis and Abatement Guidance. Retrieved February 8, 2022 from: chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://dot.sd.gov/media/documents/FinalNoiseAnalysisandAbatementGuidance071311.pdf

South Dakota State Historic Preservation Office (SHPO) CRGRID, 2022. Retrieved on May 3, 2022 from: https://apps.sd.gov/DE71SHPOCRGRID/

Town Of Humboldt. 2023. Minnehaha County Sheriffs Office. Retrieved May 1, 2024 from: https://humboldt.govoffice.com/index.asp?SEC=EF3EB2CF-8630-498D-955A-A7AE8F583B5F

United States Census Bureau (USCB), 2021. *QuickFacts – Minnehaha County, South Dakota.* Retrieved on February 7, 2023 from: https://www.census.gov/quickfacts/fact/table/minnehahacountysouthdakota/PST045222#PST045222

United States Census Bureau (USCB), 2020. Census Data CEDSCI – Decennial Information. Retrieved on February 7, 2022 from: https://data.census.gov/cedsci/

United States Department of Agriculture (USDA), 2024. Regal Fritillary (Speyeria Idalia) Field Guide. Retrieved on October 14, 2024 from https://www.fws.gov/sites/default/files/documents/Regal%20Fritillary%20Field%20Version-%20Final_0.pdf

United States Fish and Wildlife Service (USFWS), 2018. Topeka shiner (Notropis topeka) Species

Status Assessment, Version 1.0. USFWS, Region 6, Denver, Colorado. Retrieved on May 3, 2022 from: https://ecos.fws.gov/ServCat/DownloadFile/143361

United States Fish and Wildlife Service (USFWS), 2020. Species Status Report for the Rufa Red Knot (*Calidris canutus rufa).* North Atlantic-Appalachian Region, New Jersey Field Office, Galloway, New Jersey. Retrieved on December 22, 2022 from: https://ecos.fws.gov/ServCat/DownloadFile/187781

United States Fish and Wildlife Service (USFWS), 2021. Western prairie fringed orchid (Platanthera praeclara), 5-Year Review: Summary and Evaluation. US Fish and Wildlife Service, Midwest Region, Minnesota-Wisconsin Ecological Services Field Office, Bloomington, Minnesota. Retrieved on December 22, 2022 from: https://ecos.fws.gov/docs/tess/species_nonpublish/964.pdf

United States Fish and Wildlife Service (USFWS), 2024a. *IPAC Information for Planning and Consultation.* Retrieved on October 31, 2024 from: https://ipac.ecosphere.fws.gov/

United States Fish and Wildlife Service (USFWS), 2024b. Myotis septentrionalis. Retrieved on December 22, 2022 from: https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis

United States Fish and Wildlife Service (USFWS), 2024c. Hesperia dacotae. Retrieved on December 22, 2022 from: https://fws.gov/species/dakota-skipper-hesperia-dacotae

United States Fish and Wildlife Service (USFWS), 2024d. Danaus plexippus. Retrieved on December 22, 2022 from: https://www.fws.gov/species/monarch-danaus-plexippus

United States Geological Service (USGS), 2023. *Hydrologic Units for South Dakota in Google Earth.* Retrieved on January 2, 2023 from: https://www.usgs.gov/centers/dakota-water-science-center/science/hydrologic-units-south-dakota-google-earth

SD38 Corridor Study

SD Department of Transportation
Public Meeting
June 8th, 2023

NH 0042(80)371, Minnehaha County, PCN 06YP
SD38 – From Humboldt to W of Marion Road in Sioux Falls
Corridor Study

The Public Meeting was held at West Central High School in Hartford, SD on June 8th, 2023. A video was made available on the website to provide information and generate questions on design, environmental, right-of-way, and access management which are typical for most highway projects.

Comments were made to the Design Team by email, comment cards, website contact form, online survey, and online interactive map. All comments will be reviewed by the Design Team for consideration in the design process.

Overview of Interactive Map Comments Received

All comments were submitted through the comment map on the Corridor Study's website. Their main concerns are speed, amount of traffic and safety. See attached for the Comment Map with location of these comments.

- Intersection of W North Street (Highway 38) and 456th Avenue (just west of Humboldt)
    - Submitted through interactive map (6/15/2023)
        - "Due to traffic coming from multiple directions at this intersection, consider an all-way stop, roundabout, or other traffic calming technique to improve safety."

- Stretch of W North Street (Highway 38) between W 2nd Avenue and N Main Streeet in Humboldt
    - Submitted through interactive map (6/7/2023)
        - "Need to slow the speed down through town to 35 all the way west to 19"

- Stretch of Highway 38 between 460th Avenue and 259th Street
    - Submitted through interactive map (5/18/2023)
        - "Event traffic is a challenge for congestion"

- Highway 38 west of the intersection with Western Avenue (west of Hartford)

    - Submitted through interactive map (6/15/2023)
        - "Traffic does not slow down coming into Hartford, making it difficult for multi-modal traffic to enter, exit, or cross Highway 38 at Western Avenue."

- Intersection of Highway 38 and E Railroad Street/N Colton Road (east of West Central High School/Middle School in Hartford)
    - Submitted through interactive map (6/15/2023)
        - "The 90-degree-angle correction greatly improved safety at this intersection, but traffic on Highway 38 still creates safety concerns for cross traffic. Consider a traffic signal, roundabout, or other traffic calming technique at this intersection."

- Intersection of Highway 38 and E Mickelson Road
    - Submitted through interactive map (6/15/2023)
        - "As development around this intersection continues to blossom, consider a traffic signal, roundabout, or other traffic calming technique to improve safety."
    - Mark Heath (interactive map 6/7/2023)
        - "I have a safety concern. This intersection is very dangerous, especially for students 2ttempting to turn west going to school at the same time commuters are driving east at 65+ mph. It will only get more difficult when the high density apartments are full. This is also dangerous when driving west on 38 from SF attempting to turn onto Mickelson. I feel like a sitting duck stopped on 38 hoping traffic behind me doesn't rear end me at full speed."

- Stretch of Highway 38 between Hartford and Interstate-90
    - Submitted through interactive map (6/15/2023)
        - "The speed limit of 65 MPH feels too fast for this stretch of Highway 38 near Hartford Heights, especially with the number and spacing of access points and the bike trail along the highway."

- Highway 38 and Interstate-90 (east of Hartford)
    - Submitted through interactive map (6/5/2023)
        - "Traffic backs up here sometimes when cars are trying to enter I-90"
    - Submitted through interactive map (6/5/2023)
        - "Seeing cars coming east-bound (from Hartford) when exiting off the off-ramp into Hwy 38 is difficult."

- Intersection of Highway 38 (West 60th Street) and N Ellis Road
    - Alysia Boysen (interactive map 6/26/2023)
        - "Add execration lanes at Ellis road so that traffic can safely merge onto hwy 38"

- West of the intersection of Highway 38 and N La Mesa Drive
    - Alysia Boysen (interactive map 6/26/2023)
        - "Flatten road so it is easier to see traffic heading East when turning off mesa."

- West of the intersection of Highway 38/ West 60th Street and N Marion Road (Highway transitions from two-lane to four-lane)
    - Submitted through interactive map (6/5/2023)
        - "This four-lane section of hwy 38 is poorly lit up to the Marion Rd. intersection. This, combined with high speeds and a straight stretch of road all the way to the interstate makes the road ideal for racers and speeders. Many times I've witnessed cars blowing the red light at night, sometimes without headlights on or smoked-out headlights, making them difficult to see when making a legal crossing of hwy 38."

- Intersection of West 54th Street and N Marion Road (south of Highway 38 and Marion Road intersection)
    - Submitted through interactive map (6/5/2023)
        - "Very difficult to see north-bound drivers on Marion Rd when trying to turn into Marion Rd from N 54th Street. There's a hill just south of Marion/N 54th that creates a very short sight-line. Perhaps a stop light is needed here?"

- Intersection of Highway 38/West 60th Street and North Career Avenue
    - Submitted through interactive map (6/5/2023)
        - "Stoplights are badly needed here. It's a large intersection and with development now north of Hwy 38. Vehicles tend to drive over 50mph on this road, so crossing hwy 38 is dangerous."

Overview of Comments Received through the Website

- Linda Lambeth (website contact form 6/13/2023)
    - "Please do not wait until these future projects begin to fix this major problem. I have requested often that speed limit east of Humboldt be reduced and there has been no change. We are 1302 E North St which is actually Hwy 38...1mile east of Humboldt. There are 8 additional residences in the mile into Humboldt and the current 65 mile speed limit (reduced to 55 just before Hwy 19 north) is tooooo fast. This is a popular crossing for deer from Beaver Lake to the north with many killed each year. It is dangerous at time pulling out of our driveway onto Hwy 38 with speeding vehicles coming from Humboldt. Please pass this on to whichever agency can fix this!"

Overview of Comment Cards Received

All comments were from residents who attended the Public Meeting held on June 8th, 2023 at West Central High School in Humboldt. Their main concerns are speed and safety.

- Paul Dyke
    - "Right turn lane needed (heading west) at 468th St. intersection."

- Joel Tews
    - "Hwy 38 and 19 intersection is very dangerous. Not sure what to do just an observation."

- Rod Kramer
    - "Should be a sign that cross traffic doesn't stop where Hwy 19 meets 38 by Friendly's in Humboldt."

- Brent Hoffman
    - "Many residents feel the north end of the I-90/Hwy 38 interchange is inherently unsafe, largely due to vehicles pulling onto Hwy 38 from the off-ramp but there are also concerns about vehicles approaching from the east because of the line of sight. If the road could be widened and lowered through there, it would improve visibility. There are similar concerns about the Hwy38 connection with Mickelson and some residents have suggested the roadway could be lowered and/or the curve smoothed out. Thanks for the opportunity to comment. Sen. Hoffman (D-9)"

- Peggy Hoogestraat
    - "I attended the June 8 meeting in Hartford and already left comments. Later, I was told by my son, Matt, who travels the corridor more than I, that a great concern for the neighborhood is the traffic entering and leaving the race track. Safety for all is so important. Thank you for involving the communities. Peggy"

Overview of Comments on Strip Maps from the Public Meeting

All comments were written on the strip maps that were displayed at the Public Meeting held on June 8th, 2023 at West Central High School in Humboldt. Their main concerns are speed, amount of traffic and safety.

- SW corner of Hwy 38 and 457th Avenue—east of Humboldt
    - City Utility/Drainage work
- SE corner of Hwy 38 and 457th Avenue—east of Humboldt
    - Drains into back lot line ditch
- NE corner of Hwy 38 and Hwy 19—east of Humboldt
    - Truck cannot make turn (west bound from Hwy 38 turning north on Hwy 19)
- 459th Avenue south of Hwy 38
    - Curvy Road

- Mid-point between 459th Avene and 460th Avenue along Hwy 38
    - Sight-line issues
    - Seasonal seed-sales business on the north side of Hwy 38
    - Drain tiles in the field to the south
    - Rural water utility line (east to west) approximately 2,500 ft south of Hwy 38
    - Approximately 1,700 ft west of 460th Avenue is a DAPL Access Easement
        - Field Access points near this easement
- Hwy 38 and 460th Avenue Intersection
    - Notes of crashes and to "check past crash data" to the west of the intersection.
    - 460th Avenue south of the intersection has the following note:
        - "Low to no maintenance road, difficult to drive on with equipment"
    - Field work and access at the intersection of 259th Street and 460th Avenue
    - "Field Work" notes along the west side of 460th Avenue (south of the Hwy 38 intersection)
- Intersection of Hwy 38 and 259th Street
    - Field work access
    - Illegible note
- Intersection of 258th Street and 463rd Avenue—north of Hartford
    - NW corner: carbon pipeline
- Approximately 3,200 feet west of Hwy 38 and Western Avenue intersection (west of Hartford)
    - "Carbon pipeline?
- Hwy 38 and Western Avenue Intersection
    - "Trucks from Humbolt off @ Humbolt Ex toc of low clearance at Western/I90"
    - "Traffic increases as detour for interstate (I-90) when construction on I-90"
- 463rd Avenue/Western Avenue and I-90 Overpass
    - "Turbine/silo trucks cannot fit under this"
- Hartford
    - Hwy 39 and Vandemark Avenue
        - Daycare NW corner
        - Shopping center on NE corner
    - Freyder Avenue and 1st Street
        - Elementary School traffic
    - East of the intersection of Hwy 38 and Elm Road
        - "Now ROW take"
    - Hwy 38 and East 2nd Street intersection – Middle and High School
        - Need left or right turn lanes at this intersection
        - School and several access routes are denoted with arrows
        - Approximately 350 cars/day
            - Open campus at lunch
        - Bus route along 2nd Street
        - Crossing zone across Hwy 38 for students
        - NW bound traffic along Hwy 38 turning left into the school causes bottleneck

- East of Hartford
    - Hwy 38 and 260th Street intersection is circled—no note
        - New Addition going in north of existing lots on north side of intersection
            - Right turn lane?
        - Left turn lane along Hwy 38?
    - Stretch between 260th Street and 465th Avenue
        - "Put more speed limit signs. 65-not 52"
        - "Speed limit needs to be reviewed"
- Hwy 38 and 261st Street Intersection
- Note of "rear-end" with left turns Hwy 38 and Middle Drive
    - "Hard to see to turn off—have to wait. Crashed at this location"
- Hwy 38 and 261st Street Intersection
    - Note of "rear-end" with left turns
- Interstate 90 and Hwy 38
    - Dashes along the SW side of Hwy 38—no note
    - "Turbine/Silo trucks enter I90 here from Humboldt to go East"
    - "Turbine/Silo get off here to go west"
- NW of Interstate 90 and Hwy 38
    - Gravel yard—lots of large trucks
        - Add a turn lane for trucks
- Hwy 38 and 467th Street Intersection
    - "Speed limit needs to be reviewed"
- Hwy 38 and 468th Avenue Intersection
    - "Right turn lane needed" for west bound traffic turning north
- Hwy 38 and Pheasant Run Avenue Intersection
    - "Concern for LT safety"
    - Approximately 1,000 ft south of intersection "Bicentennial Homestead (1872)"

See attached for summary of online survey results.

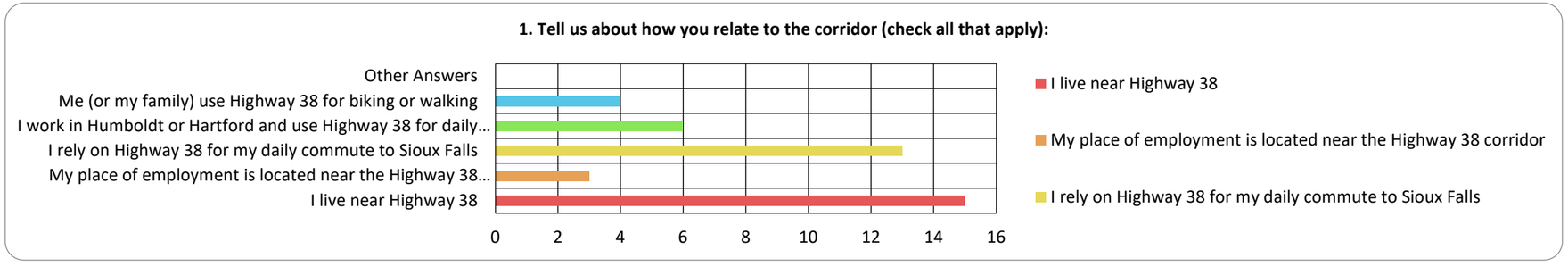
Comment Map from SD38 Corridor Study Website

08-18-2023

SD 38 Corridor Study

1. Tell us about how you relate to the corridor (check all that apply):

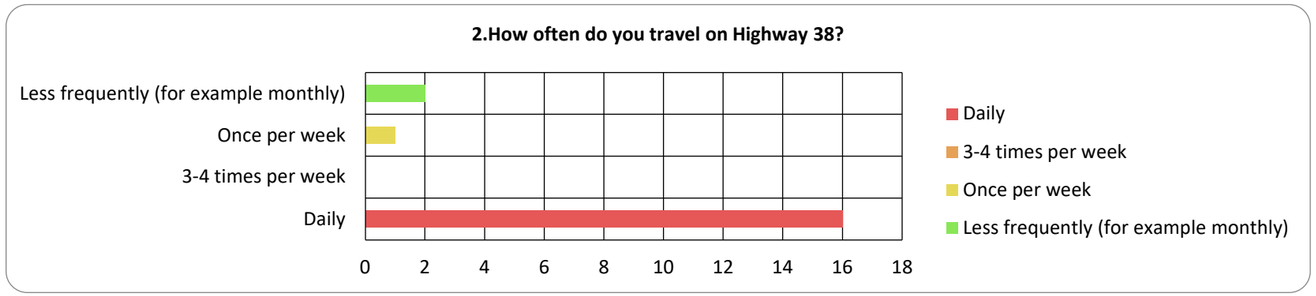
Choice	Responses	
I live near Highway 38	15	78.95%
My place of employment is located near the Highway 38 corridor	3	15.79%
I rely on Highway 38 for my daily commute to Sioux Falls	13	68.42%
I work in Humboldt or Hartford and use Highway 38 for daily needs	6	31.58%
Me (or my family) use Highway 38 for biking or walking	4	21.05%
Other Answers	0	0.00%
Answered	**19**	
Skipped	**0**	



SD 38 Corridor Study

2.How often do you travel on Highway 38?

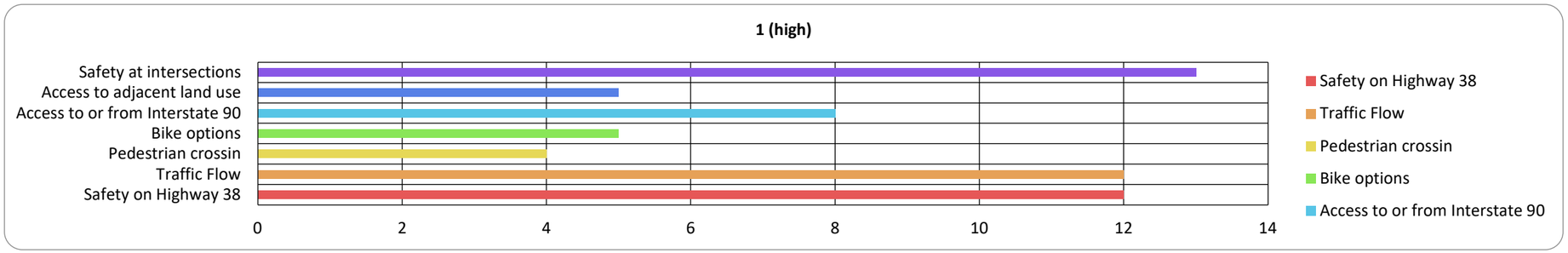
Choice	Responses	
Daily	16	84.21%
3-4 times per week	0	0.00%
Once per week	1	5.26%
Less frequently (for example monthly)	2	10.53%
Answered	**19**	
Skipped	**0**	

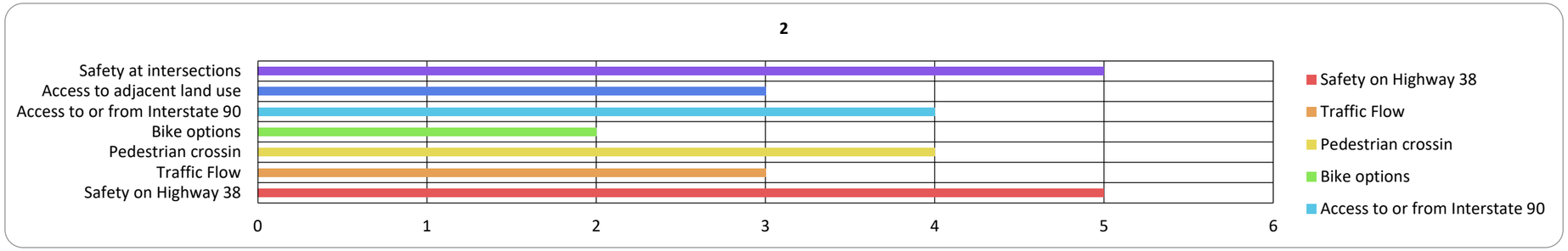


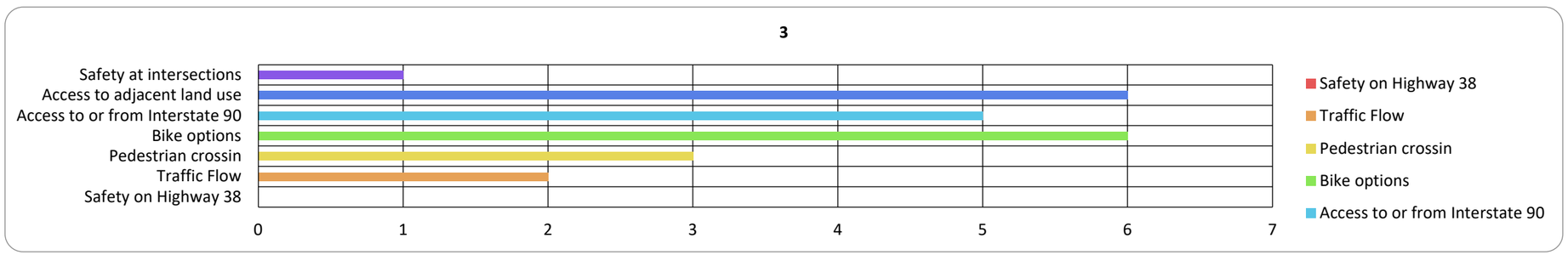
SD 38 Corridor Study

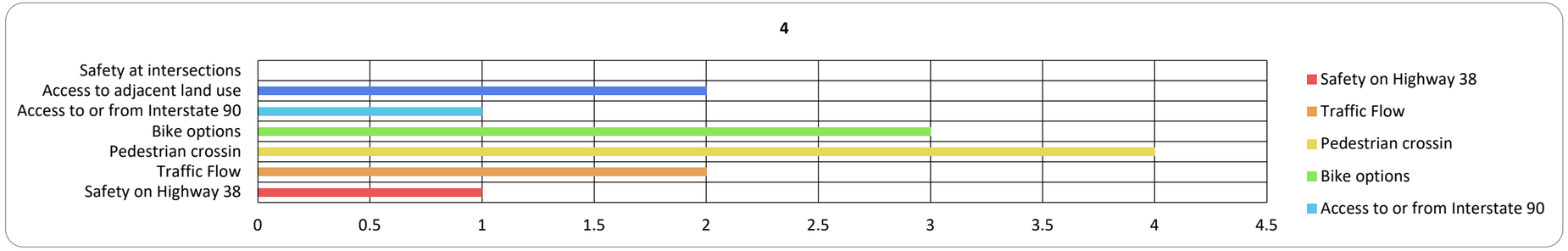
3. What would you like improved on Highway 38? Please rank based on high priority and low priority.

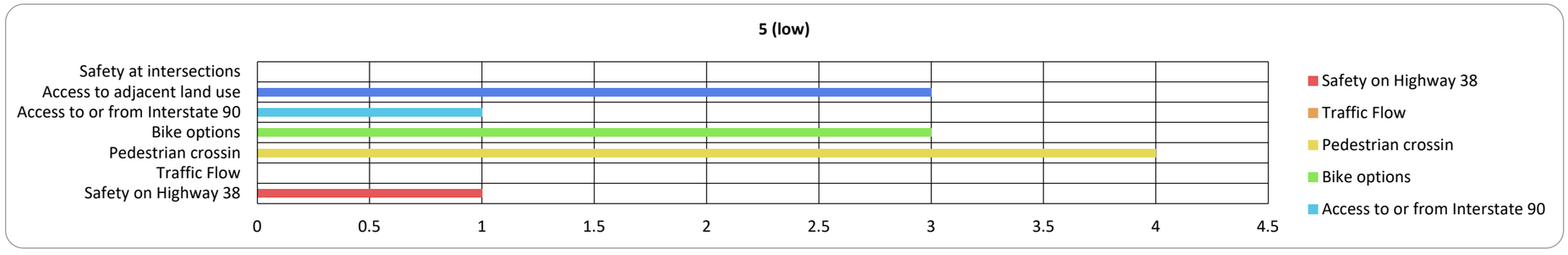
	1 (high)		2		3		4		5 (low)	
Safety on Highway 38	12	63.16%	5	26.32%	0	0.00%	1	5.26%	1	5.26%
Traffic Flow	12	63.16%	3	15.79%	2	10.53%	2	10.53%	0	0.00%
Pedestrian crossin	4	21.05%	4	21.05%	3	15.79%	4	21.05%	4	21.05%
Bike options	5	26.32%	2	10.53%	6	31.58%	3	15.79%	3	15.79%
Access to or from Interstate 90	8	42.11%	4	21.05%	5	26.32%	1	5.26%	1	5.26%
Access to adjacent land use	5	26.32%	3	15.79%	6	31.58%	2	10.53%	3	15.79%
Safety at intersections	13	68.42%	5	26.32%	1	5.26%	0	0.00%	0	0.00%
Answered	**19**									
Skipped	**0**									








4
Safety at intersections
Access to adjacent land use
Access to or from Interstate 90
Bike options
Pedestrian crossin
Traffic Flow
Safety on Highway 38
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
Safety on Highway 38
Traffic Flow
Pedestrian crossin
Bike options
Access to or from Interstate 90


5 (low)
Safety at intersections
Access to adjacent land use
Access to or from Interstate 90
Bike options
Pedestrian crossin
Traffic Flow
Safety on Highway 38
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
Safety on Highway 38
Traffic Flow
Pedestrian crossin
Bike options
Access to or from Interstate 90

SD 38 Corridor Study

4.If I could fix one thing about the Highway 38 corridor, it would be:

Response
Lack of visibility at the exit near buffalo ridge
The on ramp and off ramp of the first Hartford Exit on I-90.
Exiting off I90 to 38 needs to be improved. Blind intersection cars pull out and drive 45mph instead of posted speed limit
Turning lanes at all locations for high traffic areas.
Need turning lane
Turning west (right) onto Highway 38 from the I 90 westbound offramp is terrible. You basically have to guess if cars are coming or not. From 38 you often have to slam on the brakes for turning traffic
The road condition
Turn lanes
Traffic calming through Hartford and Humboldt.
More room to pass. Lot of semi-trucks and other slow moving vehicles obstruct lane visibility and make it unsafe to pass on many portions of SD 38
The intersection of 38 and Mickelson needs to be redesigned. I feel very unsettled with my teenage drivers and the rest of the kids in our community using that intersection daily.
Slow down thru humboldt
Turn lane by mickelson Road
Safety at Marion Rd and Hwy 38 and improve the on-/off-ramps at I-90 and Hwy 38.

Answered	**14**
Skipped	**5**

SIGN-IN SHEET

Subject:	HP 5596(25)P, Minnehaha County
Client:	South Dakota Department of Transportation
Project:	SD 38 Corridor Study from Humboldt to Sioux Falls
Meeting Date:	June 8th, 2023, 5:30 pm to 7:30 pm — Meeting Location: West Central High School

Please print clearly. Thank you.

NAME/REPRESENTING	ADDRESS	BEST CONTACT PHONE	E-MAIL
Kelly VanDeWiele FHWA	116 E Dakota Pierre	605-776-1007	kelly.vandewiele@dot.gov
Katrina Blackhead DOT	700E Broadway Pierre SD	605-773-6691	Katrina.Blackhead@state.sd.us
Mark Anderson Maple Pass / Picket Fence	1304 E 54th St N SF, SD 57104	605 351 9851	Mark@siouxfalls-electric.com
JOSH KRUGER MAPLE PASS	1305 E BENSON RD SF. SD 57104	605-321-2263	JOSH@EAGLEDESIGNBUILD.COM
ARDEN JONES MAYOR HARTFORD SD	508 PATRICK AVE HARTFORD, SD 57033	605-310-4663	hartfordsdmayor@gmail.com
Amy M. Farr HADF/City of Hartf	125 N. Main Ave Hartford, SD	605-201-2644	Amy.farr@hartfordsd.us
Janet Foster	2904 W 33rd St #135 SF	605-610-5553	janet.foster1909@gmail.com
Rod Kramer	3041 S Carlson	605.270.9296	rlkhome@yahoo.com
CELIA BENSON	Sioux Falls, SD 26132 S. Robin Dr	701-212-3639	benson.celia@gmail.com
TRENT EDBERG	900 FAIRWAY LN	605-988-4444	trentedberg29@gmail.com
Tommy Nancy Stofferahn	45938 SD Hwy 38 Humboldt, SD 57035	605-359-8834	nancy@nortecseeds.com
Bill Fleischhacker	507 Erin circle Hartford. S.D.	605-310-6897	Fleischl@goldenwest.net
Dena Prchal	46783 SD HWY 38 SF	605-359-9347	tdlperks@hotmail.com
Justin Eich	700 N. Vandemark Ave. Suite 100 Hartford, SD	(605)359-9710	RobinEeichlawoffice.com
Paul & Lori Dyke	46572 257th St. Hartford SD 57033	605-528-3941	paul@locker1157.com
Steve Gross Minnehaha County Highway	2124 E 60th St N SF 57014	605-367-4316	sgross@minnehahacounty.gov
Tammy Bauman (Lukes)	408 E North St Humboldt SD 57035	605.366.3040	tamlukes@sio.midco.net
Astrid Potter	11660 69th St Sioux Falls 57108	605 7895989	astridp@infrastructurede.com
Monie Siemonsma	25755 456th Ave Humboldt SD 57035	605-366-9498	monie@siemonsmaelectric.com

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NAME/REPRESENTING	ADDRESS	BEST CONTACT PHONE	E-MAIL
Steve Gramm	700 E Broadway Ave Pierre	605 773-3281	Steve.gramm@state.sd.us
Cole Hansen	5301 Amber Valley Pkwy S Fargo ND	605 656-0755	cole.hansen@state.sd.us
SARAH GILKERSON	700 E. BROADWAY AVE PIERRE, SD 57501	605-773-3093	sarah.gilkerson@state.sd.us
Jeff Zacharias	25854 SKUNKBERRY AVE Hartford SD	605-351-4703	JEFF @ZachariasConstructionINC.com
Darin Burkell	45377 268th St Parker SD 57057	605-929-8969	JT370@cummins.com
Phil Gundvaldson	116 W. 69TH Street St. 200 SFSD 57108	605-271-5527	philg@infrastructure.com
Sam Assam	530 S. Phillips Ave Sioux Falls, SD 57104	605-334-8040	sam@assamcompanies.com
Jim Feeney	500 N Western Ave Sioux Falls 57104	605.681.8175	jim@secog.org
Sean Heggi	11	605-691-8176	sean@secog.org
Sean Foster	200 E 5th Crooks	605.359.1267	
Peggy Hoogestraat	37575 46and Ave Chancellor, SD	605-214-0633	gardengalpeggy@gmail.com
Joel Tews	308 West 2nd Ave Humboldt SD 57035	759-0232	N/A
Teresa Sibel	125 N main Ave Hartford, SD 57033	605-528-6137	cityhall@hartfordsd.us
Justin Stoffregen	45318 262nd St Canistota SD		
Phyllis McMartin	46535 Jeannine Dr Hartford, SD	605-528-3933	———
Patrick Wiedman	26002 Kathleen Dr Hartford SD		
Ron + Karen Van Heerde	46896 SD Hwy 38 Sioux Falls, SD	605-351-5590	rkvanheerde@svtv.com
Kelly O'Gorman	200 N Washington St Humboldt SD 57035	605-940-9695	grasslakedesigns@gmail.com
Barb + Tim Haberer	46050 259th St Hartford, SD 57033	605-351-9985	bhaberer@goldenwest.net

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NAME/REPRESENTING	ADDRESS	BEST CONTACT PHONE	E-MAIL
Heath Siemonsma	25755 456th Ave Humboldt SD 57035	605-351-6073	heath@siemonsmaelectric.com
James Lichtenberg	1140 W 69th St. Sioux Falls, 57108	712-577-4200	JamesL@infrastructurepdg.com
Brent Hoffman	2608 N. Career Ave #213 Sioux Falls, SD 57107		

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NAME/REPRESENTING	ADDRESS	BEST CONTACT PHONE	E-MAIL
David Tuch	P.O. Box 205	605-261-0580	
Krista May	Infrastructure DLG	605-271-3527	krista@infrastructuredlg.com
Becky Baker	Bonnek Associates	605-610-2190	becky.b@bonnekassociates.com

SOUTH DAKOTA
HIGHWAY 38 CORRIDOR STUDY

SEGMENT #1
HUMBOLDT TO HARTFORD

0 600

SD38
CORRIDOR STUDY

001

SOUTH DAKOTA
HIGHWAY 38 CORRIDOR STUDY

SEGMENT #2
HARTFORD TO 190

0 500

SD38
CORRIDOR STUDY

002

SOUTH DAKOTA
HIGHWAY 38 CORRIDOR STUDY

SEGMENT #2
HARTFORD TO I90

0 500

SD38
CORRIDOR STUDY

002

003

SD38 CORRIDOR STUDY

SEGMENT #3
I90 EXIT 390 TO MARION ROAD

SOUTH DAKOTA
HIGHWAY 38 CORRIDOR STUDY

South Dakota Highway 38 Corridor Study

From Humboldt to Sioux Falls

Name: Joel Jones

Address: 308 W 2nd
Humboldt SD

Telephone:

E-Mail:

Contact Info: Phil Gundvaldson, P.E.
271-5527 (office)
PhilG@InfrastructureDG.com

Comments / Questions:

Hwy 38 and 19 intersection is very dangerous.
Not sure what to do. Just an observation.

Project website: http://https://www.sd38corridorstudy.com/

HRG
HRGreen

infrastructure

SD DOT

Please place this comment/question form in the designated box on the way out of the meeting, mail to the address on the opposite side of this card, or email comments and questions to PhilG@InfrastructureDG.com by July 14th, 2023.

South Dakota Highway 38 Corridor Study

From Humboldt to Sioux Falls

Name: Rod Kramer

Telephone: 605 270 9296

Address: 304 S Carlson

E-Mail:

Contact Info: Phil Gundvaldson, P.E.
271-5527 (office)
PhilG@InfrastructureDG.com

Comments / Questions:

Should be a sign that Crosstraffic doesn't stop where Hwy 19 meets 38 by Friendys in Humboldt.

Project website: http://https://www.sd38corridorstudy.com/

HRG

infrastructure

SD DOT

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South Dakota Highway 38 Corridor Study
From Humboldt to Sioux Falls

Name: BRENT HOFFMAN

Address: 2608 N. Cann Ave #213
Sioux Falls, SD 57107

Telephone: 605.215.7014

E-Mail: Brent.Hoffman

Contact Info: Phil Gundvaldson, P.E.
271-5527 (office)
PhilG@InfrastructureDG.com

Comments / Questions:

Many residents feel the north end of the I-90/Hwy 38 interchange is inherently unsafe, largely due to vehicles pulling onto Hwy 38 from the off-ramp but there are also concerns about vehicles approaching from the east because of the line of sight. If the road could be widened and lowered through there, it would improve visibility. There are similar concerns about the Hwy 38 connection with Mickelson and some residents have suggested the roadway could be lowered and/or the curve smoothed-out. Thanks for the opportunity to comment. Sen. Hoffman (D-9)

Project website: https://www.sd38corridorstudy.com/

HRGreen

infrastructure

SD DOT

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South Dakota Highway 38 Corridor Study

From Humboldt to Sioux Falls

Name: Paul Dyke

Address: 46572 257TH St
Hartford, SD 57033

Telephone: 605-528-3941

E-Mail: paulc lockers1157.com

Contact Info: Phil Gundvaldson, P.E.
271-5527 (office)
PhilG@InfrastructureDG.com

Comments / Questions:

Right turn lane needed (heading west) at 468TH St intersection.

Project website: https://https://www.sd38corridorstudy.com/

HRGreen

infrastructure

SD DOT

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South Dakota Highway 38 Corridor Study

From Humboldt to Sioux Falls

Name: Peggy Heagerstaat

Address: 27575 462nd Ave
Chancellor, SD 57015

Telephone: 605-214-0623

E-Mail: gardengalpeggy@gmail.com

Contact Info: Phil Gundvaldson, P.E.
271-5527 (office)
PhilG@InfrastructureDG.com

Comments / Questions:

I attended the June 8 meeting in Hartford and already left comments. Later, I was told by my son, Matt, who travels the corridor more than I, that a great concern for the neighborhood is the traffic entering & leaving the race tracks. Safety for all is so important.

Thank you for involving the communities.

Peggy

Project website: http://https://www.sd38corridorstudy.com/

HRGreen

infrastructure

SD DOT

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SD Department of Transportation
Public Meeting
March 13, 2024

NH 0042(80)371, Minnehaha County, PCN 06YP
SD38 – From Humboldt to W of Marion Road in Sioux Falls
Corridor Study

Individual stakeholder meetings followed a Public Meeting were held at West Central High School in Hartford, SD on March 13, 2024. A video was made available on the website to provide information and generate questions on design, environmental, right-of-way, and access management which are typical for most highway projects.

Comments were made to the Design Team by email, comment cards, website contact form, online survey, and online interactive map. Comments will be reviewed by the Design Team for consideration in the design process.

Overview of Interactive Map Comments Received

Comments were submitted through the comment map on the Corridor Study's website. Their main concerns are speed, amount of traffic and safety.

- Intersection of Highway 38 and 261st St
    - Submitted through interactive map (2/29/24)
        - "Enough people live in this neighborhood to make a turn lane a good option. It is difficult to wait to turn in or out with traffic moving at 65+."

Overview of Comment Cards Received

Comments were from residents who attended the Public Meeting held on March 13, 2024 at West Central High School in Humboldt or watched the presentation on the project website. Their concerns are summarized as follows:

- a median stopping snow and having to make U-turns
- the need for turn lanes at the racetrack
- reducing the speed limit primarily from the high school east to the interchange
- intersection sight distance issues at the interchange
- keeping their existing driveway access and configuration

- concerns with a wider highway affecting private property, fencing, existing wells, farm operations, etc.
- concerns with property acquisition and/or reduction of property values, changes to access locations, medians restricting access, and affecting existing billboard's location or visibility

The handwritten comment cards have been re-written below.

- Jeanne Foster, 200 E. 5th Street, Crooks, SD 57020
    - "No Median – 3 lanes or 4 lanes ok along 38 between 468 Ave and Ellis Road. Need to be able to move farm equipment going both east and west on 38. There are a number of properties that would need to go east and west in this section. Median will stop snow on parts of this part of the road"

- Linda Hatle, 46735 SD Highway 38, Sioux Falls, SD 57107
    - "I'm not against a 4-lane road, just against not getting a turn lane to get into my driveway. Continuing to make a U-turn to me is going to be much more dangerous. In the winter when the plows have not cleared the roads good, I could possibly get stuck in the snow making a U-turn and get frost bitten trying to shovel any vehicle out of the snow. Also the snow will not be able to blow across due to a median and if there is a drift there will be no way to get around it. When pulling a long trailer into my yard, a U-turn will not be practical. I do not wish to drive further west to go home. I want and need a turn lane to my driveway! The state needs to consider property owners should have a right to have a lane to go home without driving further."

- Allan and Angelia Martens, 46061 SD Highway 38, Hartford, SD 57033
    - "Need a no passing zone between 460th & 461 Street. Also need a left and right turn lane for racetrack between 460 and 461st Street. Both for safety concerns."

- Mike and Jana Miles, 45570 258th St., Humboldt, SD 57035
    - We are landowners along Highway 38 on 45816 Hwy 38 which borders 258th Street near Humboldt, SD. I attended the afternoon meeting on March 13th in Sioux Falls and from what your plan shows you are wanting to take out our driveway access to Highway 38. We have managed this farm for 44 years and never had an issue with our access to Highway 38. We have been very grateful for this access because of the snow accumulation that this stretch of land creates in the winter. In the winter 258th street is not always plowed due to the extremely deep snow so this will create an issue if they were to merge our driveway to 258th street. We have a cattle operation that we need to access at least twice a day to monitor and feed cattle. Adding 500 feet to our driveway would be detrimental to our operation. I understand adding a curve on the gravel road on 258th would be a benefit for those traveling 258th street but extending our driveway to join it would not be a benefit to us. Our septic system runs right up to the edge of our property by the driveway and feedlot which would also create problems if disturbed. The best solution would be to leave the driveway access from 45816 Hwy 38 as is. Thank you, Mike and Jana Miles."

Overview of Comments from the Public Meeting

Some comments were written on the strip maps that were displayed at the Public Meeting held on March 13, 2024, at West Central High School in Humboldt and other comments were made verbally to the staff at the public meeting. Their main concerns are speed, amount of traffic and safety.

1. No medians
2. Signal at Ellis Road – dangerous
3. Can we reduce speed?
    a. DOT will be doing a speed study soon on the portion if SD Highway 38 from the high school to the interchange
4. Accidents near Dorothy Ave
5. Property owner potentially ok with median if frontage road connects his and his neighbor's driveways to a median cut location – near 476th
6. Buffalo Ridge property owner concerned with median
    a. Most of his business comes from the west so needs a median cut for entrance into his property – ¾ access shown in some options but not all
    b. Does not want to lose any part of his land for interchange reconfiguration
7. City of Hartford
    a. Sidewalk initiative planned for the next year
        i. Discussion about timing of project through Hartford
            1. TA grant possibility to construct prior to project
                a. Would help possibility of receiving a grant if city had a sidewalk plan in place
                    i. Working with SECOG to develop
        ii. Would like to see a pedestrian connection from Humboldt to Hartford – especially for school
            1. Make it part of a plan and it will be easier to add to the project
    b. Teresa Sidel will send pictures of new signage

c. City of Hartford purchased land for new WWTP and does not want to give land up for interchange options
d. Concerns with access to City property on the north side of I-90 near the interchange
    i. Existing access on west side of property – need to get across the creek to access the rest of the property
e. Mayor of Hartford does not favor roundabouts
f. Within Hartford, potentially shift the roadway north at the curve to avoid purchasing ROW for trail. Verify with final survey and ROW location.

8. Highway 19
    a. No proposed changes beyond the stop signs that were added last year. Still monitoring and adding additional signage as necessary.
9. Too many interchange options presented
10. Need a "No Passing Zone" between 460th and 461st Streets. Also need a left and right turn lane for the race track due to safety concerns.

Overview of Individual landowner/Stakeholder Meetings

Two individual meetings were held with individual landowners and stakeholders following the public meeting. The first meeting was held via Zoom on March 25, 2024 with Wyatt Haines who lives at 25973 466th Avenue, just north of the Exit 390 interchange. Wyatt was also representing his neighboring property owners, the Melin family, and Haase family. Ben White and Phil Gundvaldson participated in the call and presented an overview of the project. Wyatt was primarily interested in interchange and how it may affect properties, the adjacent roadway network, and modify access. Wyatt was appreciative of the presentation and would like himself and other area landowners to be kept informed as the project progresses.

The second meeting was held in person at Hartford City Hall on April 3, 2024, with the City of Hartford and the Hartford Area Development Foundation (HADF). Ben White and Phil Gundvaldson participated in the presentation and started by playing the recorded presentation from the website. The various options for the mainline and interchange were presented and

discussed. The questions received were like those mentioned by others at the public meeting. The group was appreciative of the presentation and would like to be kept informed as the project progresses, particularly phases through Hartford and the interchange.

SD DEPARTMENT OF TRANSPORTATION

STAKEHOLDER MEETING SIGN-IN

Wednesday, March 13, 2024

Project: HP 5596(25)P, Minnehaha County

Please Print

Name	Address	Phone #(s)	Own Property on Project (Yes or No)
1. Phil Gundvaldson	116 W. 69th St. SFSD 57108	605-271-5527	NO
2. Jana Miles	45570 258th ST Humboldt SD	605-366-9437	Yes
3. CHUCK RUNGE	26731 465th HARTFORD	605-366-2754	YES
4. Tom & Nancy Stoffelsen	45938 SD Hwy 38 Humboldt, SD 57035	605-359-8834	Yes
5. Steve Gramm	700 E. Broadway Ave	605-773-3281	Yes
6. Katrina Brockhaus	700 E. Broadway Avenue	605-773-6641	Yes
7. Monica Foster	26109 S Robin Drive	701-330-6286	yes
8. Kristie Ellis	201 S Main St	605 363 3789	NO
9. Teresa Sidel	125 N Main - Hartford, SD	605-528-6137	yes
10. Amy M. Fair	" "	605-528-3338	" "
11. Steve Gram	Minnehaha County Highway Dept		
12.			
13.			
14.			
15.			

SD DEPARTMENT OF TRANSPORTATION

STAKEHOLDER MEETING SIGN-IN

Wednesday, March 13, 2024

Project: HP 5596(25)P, Minnehaha County

Please Print

Name	Address	Phone #(s)	Own Property on Project (Yes or No)
1. Leslie Murphy	221 W Capitol Suite 103, Pierre, SD 57501	605.280.5930	No
2. BEN WHITE		605-221-2651	NO
3. Lynnae Redenius	45935 SD Hwy 38 Humboldt SD 57035	605-310-1505	Yes
4. Ron Steffensen	315 N Front St. Humboldt	605-366-0887	yes
5. Larry Deen	700 E. Broadway Ave Pierre	605 773-3157	NO
6. Tom Klaxin	46729 261st St	605 528-7462	yes
7. Linda Hatle	46735 SD Highway 38	605-360-6375	YES
8. Kris Hunt	24555 466th Ave Colton, SD	605-359-3058	Yes
9. Krista May	1116 W. 69th St. Ste 200 SFSD 57110	605-271-5527	NO
10. Arden Jones	508 Patrick Ave Hartford SD	605-310-4663	No
11.			
12.			
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SD DEPARTMENT OF TRANSPORTATION

PUBLIC MEETING SIGN-IN

Wednesday, March 13, 2024

Project: HP 5596(25)P, Minnehaha County

Please Print

Name	Address	Phone #(s)	Own Property on Project (Yes or No)
1. Steve Gramm	700 E. Broadway Ave; Pierre	605-773-3281	No
2. Matthew Bro	〃	605-221-2655	No
3. Katrina Fackrell	〃	605-773-6041	No
4. Leslie Murphy	221 W Capitol; Suite 103; Pierre, SD 57501	605.280.5930	No
5. David Tuch	P.O. Box 205 Hartford S.D	605-261-0580	No
6. Eric Knuth	102 2nd St. Hartford SD	605-528-3217	School
7. Andy Wieczorek	46711 261st St Sioux Falls	605-201-7682	Yes
8. Jeanne Foster	200 E 5th Street	605-359-1267	yes
9. Teresa Sidel	125 N main Ave Hartford (City)	605 528-6187	yes
10. Linda Lambeth	1302 E. North St. Humboldt, SD	605-363-3545	yes
11. Tyler + Dawn Howey	46068 SD 38 Hartford	605-691-3503 605-838-7460	Yes
12. Allan Martens	46061 SD 38 Hartford	605-380-5206 605-290-6464	Yes
13. Beth + Cole Person	26132 S. Robin Dr Sioux Falls SD	701-212-3639	Yes
14. Frank + Kay Hebert	25911 461st Ave Hartford	605-528-3556	Yes
15. Curt Hansen	5316 W 60th St N Sioux Falls SD 57107	605-941-4481	No

SD DEPARTMENT OF TRANSPORTATION

PUBLIC MEETING SIGN-IN

Wednesday, March 13, 2024

Project: HP 5596(25)P, Minnehaha County

Please Print

Name	Address	Phone #(s)	Own Property on Project (Yes or No)
1. David Nolz	26153 466 Ave Hartford SD	605-310-3574	No
2. BRAD SONSTAD	46638 Hwy 38 BUFFALO RIDGE	6053669794	YES
3. Ron Van Heerde	46896 Hwy 38 Sioux Falls	605 351 5590	yes
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SD DEPARTMENT OF TRANSPORTATION

PUBLIC MEETING SIGN-IN

Wednesday, March 13, 2024

Project: HP 5596(25)P, Minnehaha County

Please Print

Name	Address	Phone #(s)	Own Property on Project (Yes or No)
1. CARY CLELAND	5316 W 60TH ST N	367-5680	No
2. Krista May	116 W. 69th Street Suite 200	605-271-5527	No
3. Harry Johnston	5316 W 60th St N SF SD	605-360-6053	NO
4. Steve Crowe	46689 S.D. Hwy 38 SFSD		yes
5. Thomas Spisak	46370 263rd ST Hartford SD	605 940 9349	Yes
6. Sean Heggi	500 N Western Ave Sioux Falls SD	605-681-8176	No
7. Travis Dresson	5316 W. 60th St, North, SF, SD	605-940-1165	No
8. Londa Purintan	46727 261st St Sioux Falls SD	605 261-7422	Yes
9. F. Michael Drake	25744 46 Ave Hartford S.D.	605-366-9333	Yes
10. Janet Foster	2904 W 33rd St #135 SF SD	605-610-5553	Yes
11. Michael Rodenburgh	KSG - City of Hartford Engineer		NO
12. Phyllis McMartin	46535 Jeannine Dr Hartford	605-518-3433	yes
13.			
14.			
15.			

Banner Associates, Inc.
409 22nd Avenue South
Brookings, SD 57006
Tel 605.692.6342
Toll Free 855.323.6342
www.bannerassociates.com

AGENCY, STAKEHOLDER, AND PUBLIC MEETING SUMMARY

DATE	March 13, 2024
LOCATION	SDDOT Area Office; 5316 W 60th Street N; Sioux Falls, SD 57107 (1-4 PM) West Central High School; 705 E 2nd Street; Hartford, SD 57033 (5:30-7:30 PM)
PROJECT	SD 38 Corridor Study

Stakeholder/Agency/Public Comments

SAT Member Comment

Common Questions/Concerns:

1. **Timing of Project**
2. **Impairment of access to residences/businesses with mainline improvements**
3. **Safety Improvements – speed limits, hill re-grading**
4. **Roundabouts**
5. **Property Encroachments**

SDDOT Area Office; 5316 W 60th Street N; Sioux Falls, SD 57107 (1-4 PM)

Questions were asked concerning the timing of the project.

- SDDOT has a placeholder in 2031 for projects derived from this study

Individual residing in the Songbird Development between Sioux Falls and Hartford

- Concerned with encroachment of land if the roadway widens to a 4-lane
- Safety – there are adjacent houses to the road already; these will become closer to the roadway if widened to a 4-lane
- Speed limit – should be 55mph for the entire route
- Why the changes to access points and the side roads?
    - Squaring up intersections for safety and truck traffic. Entry points preferred perpendicular to the roadway.

Will there be a traffic signal on Tea/Ellis Road?

- Nothing is warranted for the near future, but this may need re-evaluation as traffic volumes increase
- The City of Sioux Falls' long-term plan for Tea/Ellis Road is a 4-lane all the way through

Center turn lane vs. concrete barrier median:

- Center turn lane would be preferred
    - Building a median would set the stage for future development and access points by limiting connections to SD 38. This would increase safety and reduce accidents.

Changes since the first 2023 agency/stakeholder/landowner meeting:

- Traffic analysis is complete

- Alternatives are complete; next step will be to select a preferred alternative

Will there be any cut and fill to hillsides to improve vision?

- Likely yes, especially if we know there are problematic locations.

Property owner at 258th Street intersection, east of Humboldt

- Questioning the road realignment of 258th Street
    - Moving landowner to one point of access and changing alignment of 258th to allow for a better vantagepoint when entering SD 38.
- Currently the property is used for an Air B&B (she does not reside there, but does have cattle there and farmground)
- Will 258th stay gravel? Yes.
- Cattle lot has been moved back from the ROW already; fence is guardrail
- Hill (pink arrow) to the west of the house blocks snow; would not mind it being graded down
    - A 7:1 backslope could be considered to the hill. Take the hill out to the ROW, provide more snow storage. May need a temporary easement to cut the backslope.

- Eagle nest to the west of her property.
    - Banner confirmed. Approximate lat/long 43.646921, -97.053676. Two adults, potential eaglets in nest.

Property owners at 45938 SD 38:

- Shed to the east of the house is also theirs, used by Nortec Seeds
- No change to access; no concerns.

City of Hartford –

- Liked Interchange Options 1 and 9 the best.
- Bike Trail in Hartford on south side of road – becomes very close to roadway along one stretch
    - North side of SD 38 has more room, but also more access points to deal with

- Owns triangle piece south of 38, west of I90 (pink polygon below)

  - Do not prefer alternatives that cut the triangle parcel off
  - They would like to sell this parcel, but access becomes problematic with the interchange improvements – a roundabout design would work, but they don't like roundabouts.
    - For access to this parcel off the interchange, it would need FHWA approval and has to be a public roadway; cannot be private. Anything that would tie to the ramp cannot be a private road.
  - Likely would use approach access to parcel coming from the west across the creek.
  - Have plans to expand the WWTP to the east, so avoid doing any improvements/alternatives that would affect that area.
- Bike path timing?
  - If DOT would do a path in conjunction with a SD 38 project, the City would have to wait for that project to come along. If they decide to do it before a SD 38 project, they could apply for TAP funding and use those funds to construct the path. If the road project would impact an existing bike path, SDDOT would replace the path.
- In recent years, have been annexing more land to the east.
- Pedestrian usage at the High School crossings – does this area need a light?
  - would warrant a light at 2nd Street.
  - Also would be a good spot for a roundabout since the road is skewed.
- City overall would like to see:
  - Avoidance of City-owned land
  - Reduced speeds east of town
  - Incorporation of bike trail on south side, sidewalk on the north side
  - Median

West Central High School; 705 E 2nd Street; Hartford, SD 57033 (5:30-7:30 PM)
Resident along the route:

- With a raised median (18-20 feet wide), a person could end up going to the next mile marker to turn around
- Concern with lack of breaks to turn around and driving farther to do so in rural cross sections.
    - Raised medians will reduce turning vehicle accidents.

Resident near Hartford:

- What about roundabouts for kids going to school? That seems dangerous.
    - Younger generations actually navigate roundabouts better than older generations.
- Concern about impacts to existing trees and shelterbelts.

Resident on Middle Drive:

- Concern of how access will be provided to residences during construction.

Resident adjacent to SD 38:

- (Husband) Sometimes there is no passing right now due to traffic and sight restrictions and there is no median
- (Wife) Likes the 4-lanes, dislikes the median.
- Concerns with maneuvering horse trailer or hay loads from their house (south of SD 38) across the road to their pasture north of SD 38.
- Safety concerns with riding horses across 4-lanes and a median.
- With the reconfiguration of the access road, they like the idea of the whole development not driving in front of their house.

Make sure culvert drainages are adequate.

Make a 4-way stop on Western / SD 38 – funnel traffic to the interstate.

Property owner near Pheasant Run Avenue – realignment on south side of the road

- Would like more turn-around locations
- Heavy farm equipment – have to go to turn around at Ellis Road – already heavy traffic there
- If they turn to the west, there's a hill; line of sight isn't good
- Would prefer center turn lane as opposed to median.

Brad Songstad – likes Option 1 and 3 for Mainline for his business

- Option 4, no driveway to his parcel south of SD 38
- Utility easement present
- Current striping in front of his business on the north side of SD 38 confuses customers
- If there was a raised median, no one would get into his business. 99% of his business comes from WB I-90, no place to turn in. He needs a median break.
- Aerial backgrounds are old; there is development in the lots east of his parcel south of 38

Landowner on Tea Ellis Road – northwest corner of intersection – consolidate to one access point.

- Concern with median

Social Pinpoint Comments - March 26, 2024

Created on	Type	Threads	Comment	Up Votes	Email	Phone	Postcode	Firstname	Lastname	Device Type	Region	City
5/31/2023 18:15	Safety	Safety-01	Event traffic is a challenge for congestion	0	tthoreen@hrgreen.com	6513989333	55104	Timothy	Thoreen	Desktop	Illinois	Chicago
6/1/2023 11:06	Safety	Safety-02	I have safety concern	1	tthoreen@hrgreen.com	6513989333	55104	Timothy	Thoreen	Desktop	Illinois	Chicago
6/1/2023 11:08	Other	Other-1	Other comment option	0	tthoreen@hrgreen.com	6513989333	55104	Timothy	Thoreen	Desktop	Illinois	Chicago
6/5/2023 11:26	Safety	Safety-03	This four-lane section of hwy 38 is poorly lit up to the Marion Rd. intersection. This, combined with high speeds and a straight stretch of road all the way to the interstate makes the road ideal for racers and speeders. Many times I've witnessed cars blowing the red light at night, sometimes without headlights on or smoked-out headlights, making them difficult to see when making a legal crossing of hwy 38.	0	anyhoo@gmail.com					Mobile		
6/5/2023 11:36	Traffic	Traffic-1	Seeing cars coming east-bound (from Hartford) when exiting off the off-ramp into Hwy 38 is difficult.	2	anyhoo@gmail.com					Mobile		
6/5/2023 11:37	Traffic	Traffic-2	Traffic backs up here sometimes when cars are trying to enter I-90	0	anyhoo@gmail.com					Mobile		
6/5/2023 11:40	Safety	Safety-04	Stoplights are badly needed here. It's a large intersection and with development now north of Hwy 38. Vehicles tend to drive over 50mph on this road, so crossing hwy 38 is dangerous.	3	anyhoo@gmail.com					Mobile		
6/5/2023 11:44	Safety	Safety-05	Very difficult to see north-bound drivers on Marion Rd when trying to turn into Marion Rd from N 54th Street. There's a hill just south of Marion/N 54th that creates a very short sight-line. Perhaps a stop light is needed here?	3	anyhoo@gmail.com					Mobile		
6/7/2023 12:27	Safety	Safety-06	Need to slow the speed down through town to 35 all the way west to 19	0	siemonsmaelectric@yahoo.com					Mobile	South Dakota	Winner
6/7/2023 14:06	Safety	Safety-02-child	This intersection is very dangerous, especially for students atempting to turn west going to school at the same time commuters are driving east at 65+ mph. It will only get more difficult when the high density apartments are full. This is also dangerous when driving west on 38 from SF attempting to turn onto Mickelson. I feel like a sitting duck stopped on 38 hoping traffic behind me doesn't rear end me at full speed.	2	mark.heath@sanfordhealth.org					Desktop	South Dakota	Sioux Falls
6/15/2023 10:28	Traffic	Traffic-3	Traffic does not slow down coming into Hartford, making it difficult for multi-modal traffic to enter, exit, or cross Highway 38 at Western Avenue.	2	mr.atlasboy@gmail.com					Desktop		
6/15/2023 10:29	Traffic	Traffic-4	The speed limit of 65 MPH feels too fast for this stretch of Highway 38 near Hartford Heights, especially with the number and spacing of access points and the bike trail along the highway.	0	mr.atlasboy@gmail.com					Desktop		
6/15/2023 10:34	Safety	Safety-07	The 90-degree-angle correction greatly improved safety at this intersection, but traffic on Highway 38 still creates safety concerns for cross traffic. Consider a traffic signal, roundabout, or other traffic calming technique at this intersection.	3	mr.atlasboy@gmail.com					Desktop		

6/15/2023 10:38	Safety	Safety-08	As development around this intersection continues to blossom, consider a traffic signal, roundabout, or other traffic calming technique to improve safety.	2	mr.atlasboy@gmail.com					Desktop		
6/15/2023 10:40	Safety	Safety-09	Due to traffic coming from multiple directions at this intersection, consider an all-way stop, roundabout, or other traffic calming technique to improve safety.	2	mr.atlasboy@gmail.com					Desktop		
6/26/2023 6:30	Safety	Safety-10	Flatten road so it is easier to see traffic heading East when turning off mesa.	1	alysia.boysen@gmail.com					Mobile	Nebraska	Omaha
6/26/2023 6:31	Safety	Safety-11	Add execration lanes at Ellis road so that traffic can safely merge onto hwy 38	1	alysia.boysen@gmail.com					Mobile	Nebraska	Omaha
3/13/2024 14:26	Traffic	Traffic-5	Enough people live in this neighborhood to make a turn lane a good option. It is difficult to wait to turn in or out with traffic moving at 65+	1	kristen.foster88@gmail.com	7013309738	57107	Kristen	Hall	Mobile	South Dakota	Sioux Falls
3/24/2024 9:17	Traffic	Traffic-3-child	add a roundabout	0	bud7997@gmail.com					Desktop	South Dakota	Hartford
3/24/2024 9:18	Safety	Safety-07-child	looks like a great place for a roundabout	0	bud7997@gmail.com					Desktop	South Dakota	Hartford
3/24/2024 9:25	Safety	Safety-08-child	this intersection is a tricky one from both directions on 38. The cars turning into and from Mickleson, and add the fact that its a curve and a hill. Great spot for a roundabout	0	bud7997@gmail.com					Desktop	South Dakota	Hartford
3/24/2024 9:33	Traffic	Traffic-2-child	hard to see W bound 38 traffic when getting off W bound 90. I like Option 6 of the interchange plan. Roundabouts will at least slow the flow but keep things moving.	0	bud7997@gmail.com					Desktop	South Dakota	Hartford
3/24/2024 9:41	Safety	Safety-11-child	N bound Ellis Road traffic turning East on 38 could use a turning lane onto an acceleration lane. I'm a W bound turner myself, not sure if there could be a left turning acceleration lane	0	bud7997@gmail.com					Desktop	South Dakota	Hartford
3/26/2024 11:12	Traffic	Traffic-2-child	Strongly recommend a right turn lane, coming off the intestate exit, with no stop sign (maybe a yield sign) which extends past the service road to allow merging vehicles to get up to speed and to allow easier commute to Hartford and also reducing traffic that backs up at the exit.	0	wwhaines@icloud.com					Mobile	Arizona	Phoenix

Philip Gundvaldson

From: White, Ben <bwhite@hrgreen.com>
Sent: Friday, March 22, 2024 8:59 AM
To: Philip Gundvaldson
Subject: FW: SD38 Corridor Study Comment

Follow Up Flag: Follow up
Flag Status: Flagged

FYI

Ben White, PE, LS
Senior Project Manager | Regional Director - Transportation
HR Green® | Building Communities. Improving Lives.

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From: SD38 Corridor Study Webflow Forms <no-reply-forms@webflow.com>
Sent: Thursday, March 21, 2024 7:44 PM
To: Whitver, Heidi <hwhitver@hrgreen.com>; Thoreen, Timothy <tthoreen@hrgreen.com>; White, Ben <bwhite@hrgreen.com>; steve.gramm@state.sd.us
Subject: SD38 Corridor Study Comment

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You just got a form submission!

Form
Contact Form

Site
SD38 Corridor Study

Submitted content
Name: Mike and Jana Miles
Email: jmiles@siouxvalley.net
Comments: We are land owners along Highway 38 on 45816 Hwy 38 which borders 258th street near Humboldt SD. I attended the afternoon meeting on March 13th in Sioux Falls and from what your plan

shows you are wanting to take out our driveway access to Highway 38. We have managed this farm for 44 years and never had an issue with our access to Highway 38. We have been very grateful for this access because of the snow accumulation that this stretch of land creates in the winter. In the winter 258th street is not always plowed due to the extremely deep snow so this will create an issue if they were to merge our driveway to 258th street. We have a cattle operation that we need to access at least twice a day to monitor and feed cattle. Adding 500 feet to our driveway would be detrimental to our operation. I understand adding a curve on the gravel road on 258th would be a benefit for those traveling 258th street but extending our driveway to join it would not be a benefit to us. Our septic system runs right up to the edge or our property by the driveway and feedlot which would also create problems if disturbed. The best solution would be to leave the driveway access from 45816 Hwy 38 as is. Thank you, Mike and Jana Miles

Number of submissions received
7/500 this month
March 1st – March 31st

Need more submissions?
Please contact your website administrator.

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Philip Gundvaldson

From: SD38 Corridor Study Webflow Forms <no-reply-forms@webflow.com>
Sent: Wednesday, March 13, 2024 8:48 PM
To: Whitver, Heidi; Thoreen, Timothy; White, Ben; steve.gramm@state.sd.us
Subject: SD38 Corridor Study Comment

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You just got a form submission!

Form
Contact Form

Site
SD38 Corridor Study

Submitted content
Name: Kristen Hall
Email: kristen.hall88@outlook.com
Comments: Hello, I live at the house right at the junction of 261st and Highway 38. I was concerned that the meeting tonight only discussed closing our access to the highway. Visibility to enter 38 is much worse at 467th Ave and many people in the neighborhood use the 261st access for this reason. I am also concerned about how the larger road will affect our well that we share with two other houses. The access to the neighborhood is also beneficial due to large vehicles such as buses or trucks being able to use 261st to safely turn around if needing to go back in the other direction. As someone very much affected by this decision, I feel our best outcome would be a four lane road past the neighborhood with an optional turn lane to 261st St. If there seems to be no way around closing 261st, then it would be beneficial to at least have 467th paved down to 12th St.

Number of submissions received
4/500 this month
March 1st – March 31st

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Please contact your website administrator.

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Philip Gundvaldson

From: noreply@socialpinpoint.com
Sent: Wednesday, March 13, 2024 2:27 PM
To: Thoreen, Timothy; White, Ben
Subject: New Comment[Traffic] created on project: SD 38 Corridor Study [A58153]

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The following Comment from kristen.foster88@gmail.com was posted regarding the project: SD 38 Corridor Study

Enough people live in this neighborhood to make a turn lane a good option. It is difficult to wait to turn in or out with traffic moving at 65+

Review the Comment now

Powered by Social Pinpoint

Philip Gundvaldson

From: SD38 Corridor Study Webflow Forms <no-reply-forms@webflow.com>
Sent: Wednesday, March 13, 2024 2:06 PM
To: Whitver, Heidi; Thoreen, Timothy; White, Ben; steve.gramm@state.sd.us
Subject: SD38 Corridor Study Comment

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You just got a form submission!

Form
Contact Form

Site
SD38 Corridor Study

Submitted content
Name: Peggy Hoogestraat
Email: gardengalpeggy@gmail.com
Comments: Today, March 13, 2024, I listened to the prerecorded presentation for the project. Please note that on the traffic volume projections map, the I-90 speedway entrance and the 459th Ave are marked incorrectly. I discovered that when reviewing where my own property is along Hwy 38. From what I understand, there will be no additional changes from Humboldt to Hartford's Western Avenue as a result of this study. Please let me know if that is correct. I will not be able to attend the open house tonight. Thank you

Number of submissions received
3/500 this month
March 1st – March 31st

Need more submissions?
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Unsubscribe from notifications for this site.

Philip Gundvaldson

From: SD38 Corridor Study Webflow Forms <no-reply-forms@webflow.com>
Sent: Wednesday, March 6, 2024 5:53 PM
To: Whitver, Heidi; Thoreen, Timothy; White, Ben; steve.gramm@state.sd.us
Subject: SD38 Corridor Study Comment

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You just got a form submission!

Form
Contact Form

Site
SD38 Corridor Study

Submitted content
Name: Kristi Nimick
Email: usnimicks@yahoo.com
Comments: your flyer you sent out says the meeting is on Wednesday March 13, this web page says the 14th? Which is correct?

Number of submissions received
1/500 this month
March 1st – March 31st

Need more submissions?
Please contact your website administrator.

If you believe this is a spam submission, please forward to form-spam-reports@support.webflow.com

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South Dakota Highway 38 Corridor Study

From Humboldt to Sioux Falls

Name: Jeanne Foster

Address: 200 E 5th Street
Brooks, SD 57020

Telephone: 605-359-1267

E-Mail: [redacted] 200t.jeanne@gmail.com

Contact Info: Phil Gundvaldson, P.E.
605-271-5527 (office)
PhilG@InfrastructureDG.com

Comments / Questions:

No median - 3 lanes of 4 lanes ok along 38 between 465 Ave and Ellis Road.
Need to be able to move farm equipment going both east and west on 38.
The are a number of properties that would need to go east & west in this section
Median with stop [redacted] slow a parts of this part of the Road.

Project website: https://www.sd38corridorstudy.com/

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infrastructure

SD DOT

Please place this comment/question form in the designated box on the way out of the meeting, mail to the address on the opposite side of this card, or email comments and questions to PhilG@InfrastructureDG.com by April 19th, 2024.

South Dakota Highway 38 Corridor Study
From Humboldt to Sioux Falls

Name: Linda Hatle

Address: 46735 SD Highway 38
Sioux Falls, South Dakota 57107

Telephone: 605/360-6375

E-Mail: Hatlelinda@gmail.com

Contact Info: Phil Gundvaldson, P.E.
605-271-5527 (office)
PhilG@InfrastructureDG.com

Comments / Questions:

I'm not against a 4 lane road, just against not getting a turn lane to get into my driveway. Continuing on to make a U-turn to me is going to be much more dangerous. In the winter when the plows have not cleared the roads good, I could possibly get stuck in the snow making a U-turn and get frost bitten trying to shovel my vehicle out of the snow. Also the snow will not be able to blow across due to a median and if there is a drift, there will be NO way to get around it. When pulling a long trailer into my yard, a U-turn will not be practical. I do not wish to drive further west to go home. I want and need a turn lane to my driveway! The state needs to consider property owners should have a right to have a lane to go home without driving further.

Project website: https://www.sd38corridorstudy.com/

HRGreen

infrastructure

SD DOT

Please place this comment/question form in the designated box on the way out of the meeting, mail to the address on the opposite side of this card, or email comments and questions to PhilG@InfrastructureDG.com by April 19th, 2024.

South Dakota Highway 38 Corridor Study
From Humboldt to Sioux Falls

Allan and Angelia Martens
46061 SD HWY 38
Hartford SD 57033

Telephone: _____

E-Mail: _____

Contact Info: Phil Gundvaldson, P.E.
605-271-5527 (office)
PhilG@InfrastructureDG.com

Comments / Questions:

Need A N passing zone between 460th & 461 street.
Also need a left & Right turn lane for race track
between 460 & 461st Street. Both for safety concerns

Project website: https://www.sd38corridorstudy.com/

HRGreen

infrastructure

SD DOT

Please place this comment/question form in the designated box on the way out of the meeting, mail to the address on the opposite side of this card, or email comments and questions to PhilG@InfrastructureDG.com by April 19th, 2024.

Miles Properties [illegible]

South Dakota Highway 38 Corridor Study

From Humboldt to Sioux Falls

Name: Mike & Jana Miles

Address: 4557 & 258th St
Humboldt SD 57035

Telephone: 605-366-9437 & 366-5320

E-Mail: jmiles@siouxvalley.net

Contact Info: Phil Gundvaldson, P.E.
605-271-5527 (office)
PhilG@InfrastructureDG.com

Comments / Questions:

We are land owners along Highway 38 on 45816 Hwy 38 which borders 258th street near Humboldt SD. I attended the afternoon meeting on March 13th in Sioux Falls and from what your plan shows you are wanting to take out our driveway access to Highway 38. We have managed this farm for 44 years and never had an issue with our access to Highway 38. We have been very grateful for this access because of the snow accumulation that this stretch of land creates in the winter. In the winter 258th street is not always plowed due to the extremely deep snow so this will create an issue if they were to merge our driveway to 258th street. We have a cattle operation that we need to access at least twice a day to monitor and feed cattle. Adding 500 feet to our driveway would be detrimental to our operation. I understand adding a curve on the gravel road on 258th would be a benefit for those traveling 258th street but extending our driveway to join it would not be a benefit to us. Our septic system runs right up to the edge or our property by the driveway and feedlot which would also create problems if disturbed. The best solution would be to leave the driveway access from 45816 Hwy 38 as is. Thank you, Mike and Jana Miles

Project website: [illegible]

HRGreen

infrastructure

SD DOT

[illegible] this comment/question form in the designated box on the way out of the meeting, mail to the address on the [illegible] to PhilG@InfrastructureDG.com by April 19th, 2024.

Buffalo Ridge Corporation

46614 Hwy 38-Buffalo Ridge, SD 57107

(605)528-3931 (605)366-9794 cell

17 April 24

Steve Gramm

SDDOT

Greetings,

It was a pleasure meeting everyone at the SD38 Corridor Study public open house at West Central High School. It is always nice meeting fellow SDSU Civil Engineering graduates.

We own properties adjacent to the SE corner of the I-90/SD38 interchange. The main property being north and south of I-90, bound to the south by SD38, and to the west by the east-bound ramp right-of-way (depicted as A). A smaller six-acre parcel adjacent to the SE corner of the SD38/466th Ave intersection rights-of-way (depicted as B).

We paid a premium for these properties due to their location adjacent to their intersection rights-of way. The six-acre lot was purchased at auction over twenty years ago. It sold for more than ten times per acre than the adjacent property south and east, resulting from its intersection location.

We support planned options that mitigate reduction of our property values. Several planned options show relocations of right-of-way for the interstate, highway, and 466th Ave. To mitigate reduction in property value, our property lines common to existing rights-of-way must remain common to any relocated rights-of-way. Such scenarios are depicted as hatched areas south of the interstate on the attached aerial photographs.

We support options that least affect our property, including but not limited to land, structures, billboards/signs, utilities, fences etc. We would expect to be compensated/reimbursed for any loss or relocation of any such property. Transfer of state-owned land would be considered as depicted by hatched areas north of the interstate.

Options least affecting our properties include options 5, 8 and 9, with 5 being most desirable. Option 3.2 could be considered if slightly modified. The lot adjacent east of parcel B is owned by ANCO. The proposed alignment of 466th Ave runs through the newly

constructed ANCO building. Cemcast is adjacent to parcel B to the south and southeast. Cemcast would probably be agreeable to swap their NW triangular corner for an equal SE corner of parcel B, squaring off both lots. 466th Ave could then be aligned dividing parcel B roughly into equal parcels, depicted on option 3.2 and attached Figure A. Again, we would expect compensation to relocate any billboards, structures, utilities, fences etc. We would consider a land transfer of state-owned land for compensation of land lost (hatched area across interstate).

Options 1, 2, 3, 4, 6 & 7 have a much more drastic effect on our properties. We oppose moving 466th Ave unless our existing common property line is moved along with relocated 466th Ave right-of-way. These options also affect significantly more of our land, billboards, structures, utilities and fence etc. Again, state-owned land across interstate could be considered for compensation.

We do not support any medians, raised or painted, prohibiting customers entering or leaving our properties. Several years ago, a painted median prohibiting eastbound traffic from accessing our business was created along SD38. Almost all of our customers exit off I-90 arriving at our business eastbound on SD38. This has resulted in a very negative impact not only on our business but a major inconvenience for our customers.

Most drive past our driveway slowly, prohibited by the painted median. Most find a place to turn around anywhere from 0.1 to 3.0 miles down the highway. Some drive all the way to Marion Road back to I-90W. Many of our customers are big RVs, trailers of all kinds, including campers and semi-trucks, which are difficult to U-turn. We were dumbfounded that not only did nobody ask for our input, but we were also never informed of it beforehand.

Of the three mainline options, we prefer option one, painted, not raised medians. We support a center turn lane allowing both right and left turns similar to the center turn lane just across I-90 along Hartford Heights, a stone's throw away. They have similar driveways and intersections with a center two-way turn lane, approved with a higher traffic count.

In addition, for years the directional guide sign just before the stop sign on the east bound off ramp indicated gas 1.0 mile to the left, when it is 0.1-0.2 miles. Recently the 1.0 mile has been changed to 0.4 mile. This also causes gas customers to drive past only to inconveniently search for a place to turn around without running out of gas.

And last, we do not support the removal of the residential driveway to the east. Both residences each have their own separate driveway. The centerline of the west driveway is thirty feet west of the common property line. If the east property driveway is removed, the

west driveway will have to be moved thirty feet east to straddle the property line (Fig. B). A tree or two would also have to be removed.

In summary, our first preference would be to leave existing conditions unchanged with the exception of the painted median prohibiting access to our business driveway and correcting the directional guide sign at the off ramp.

Our next preference would be options 5,8 & 9. We expect our property lines common with existing rights-of-way will move along with the new rights-of-way depicted as hatched area west of parcel A. Driveway shown across SD38 from 466th intersection. Hatched area west of B and state-owned land across I-90 could be considered for transfer as compensation for property loss. Option 3.2 may be ok with a revised alignment due to the existing building.

Options 1,3, 4 & 6 are preferred least unless parcel B property line commonly shared with the existing right-of-way will move along with new right-of-way. Not doing so would greatly reduce the value of parcel B. The smaller hatched area further west and state-owned land across I-90 could be considered for transfer to compensate for property loss. Parcel B may also have to have driveway access to SD38.

A SD38 painted center turning lane allowing both right and left turns similar to the other side of the I-90 bridge along Hartford Heights is preferred. It is permitted with a higher traffic count with similar driveways and street intersections.

Last, we prefer the existing driveway not to be removed, requiring relocation of the other driveway to straddle the property line and tree removal.

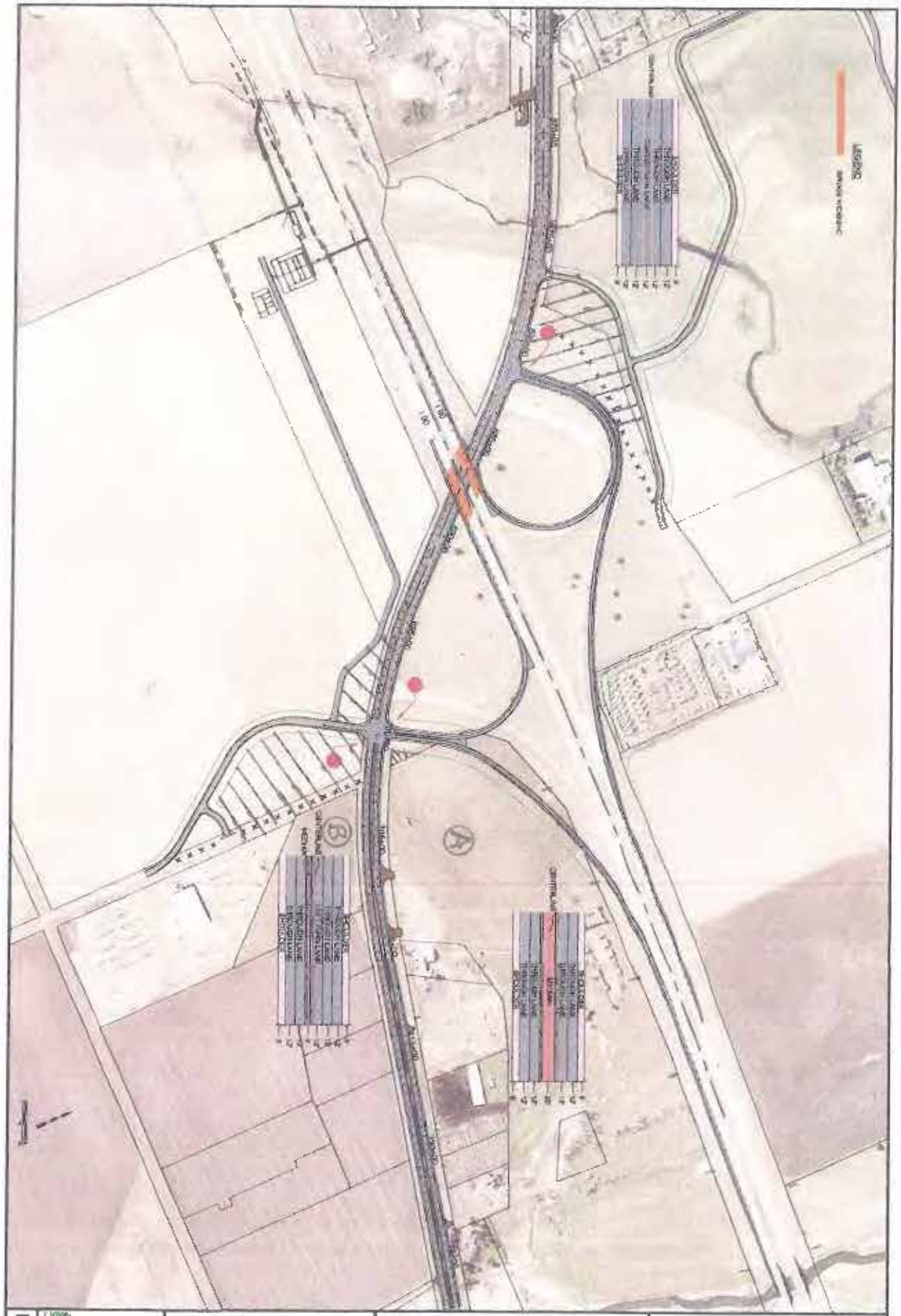
Please feel free to contact me to discuss further.

Best Regards,

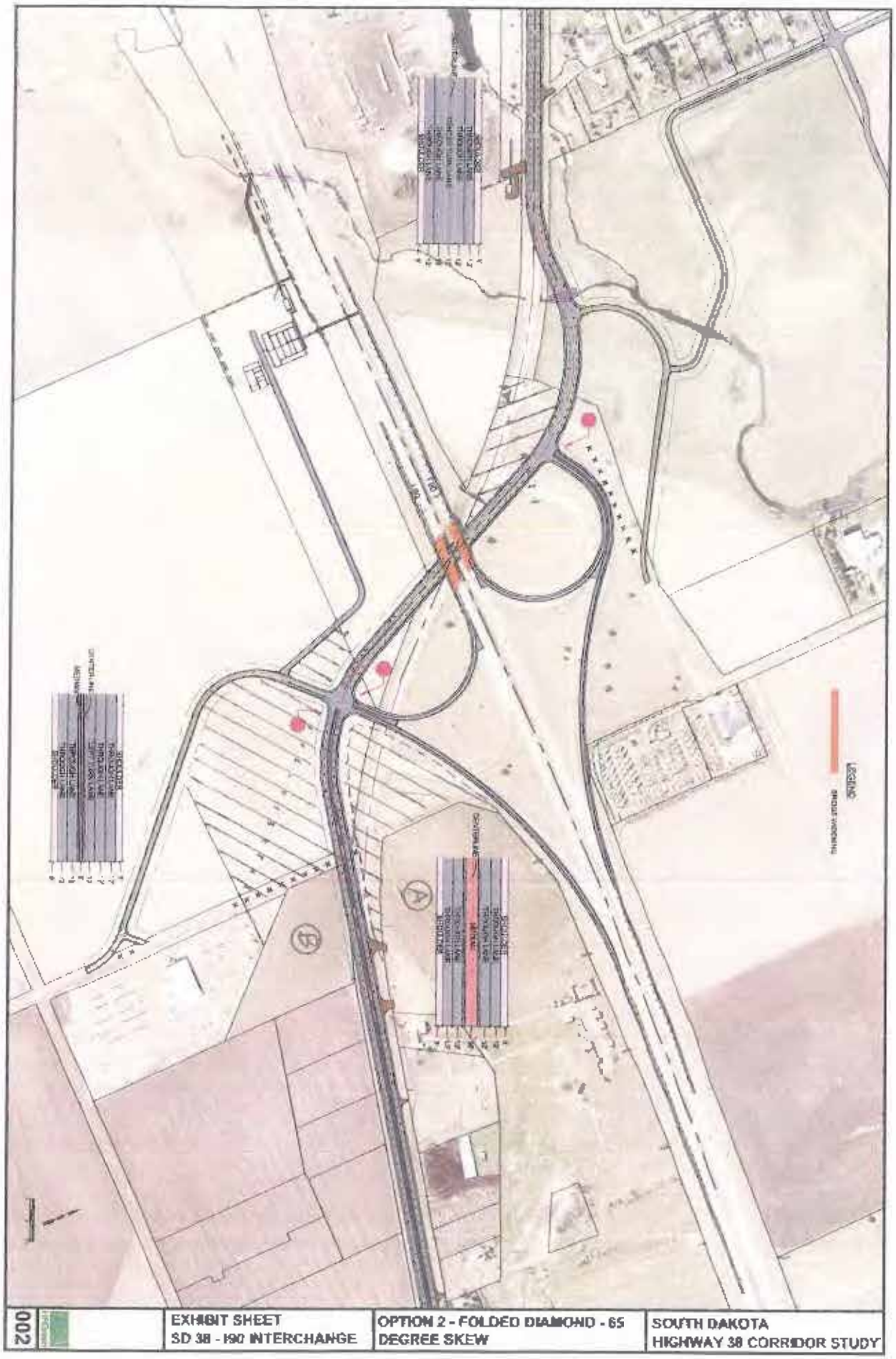
Brad Songstad, PE

Cc: Michael Paulson-Christopherson, Anderson, Paulson & Fideler

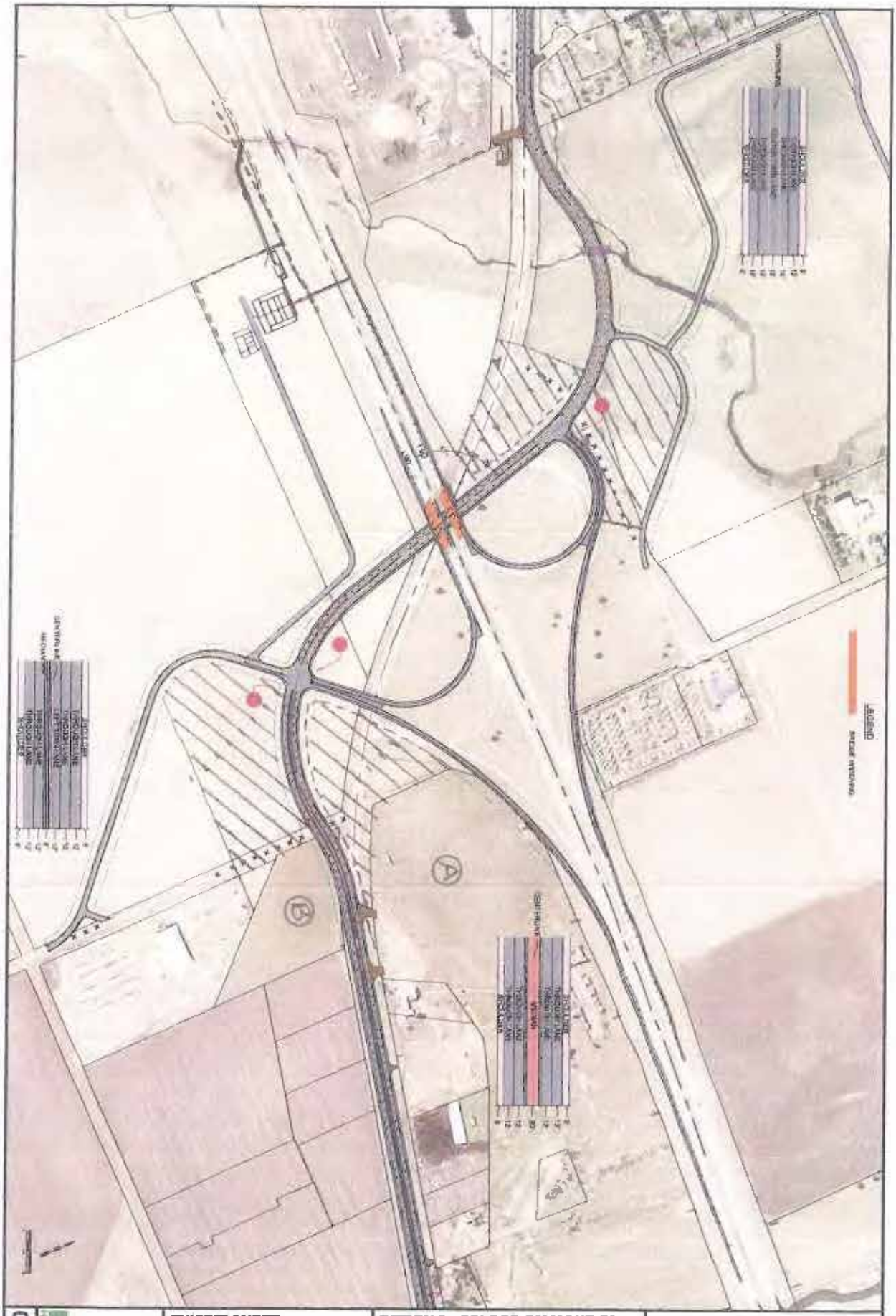
Clint Sargent-Meierhenry Sargent



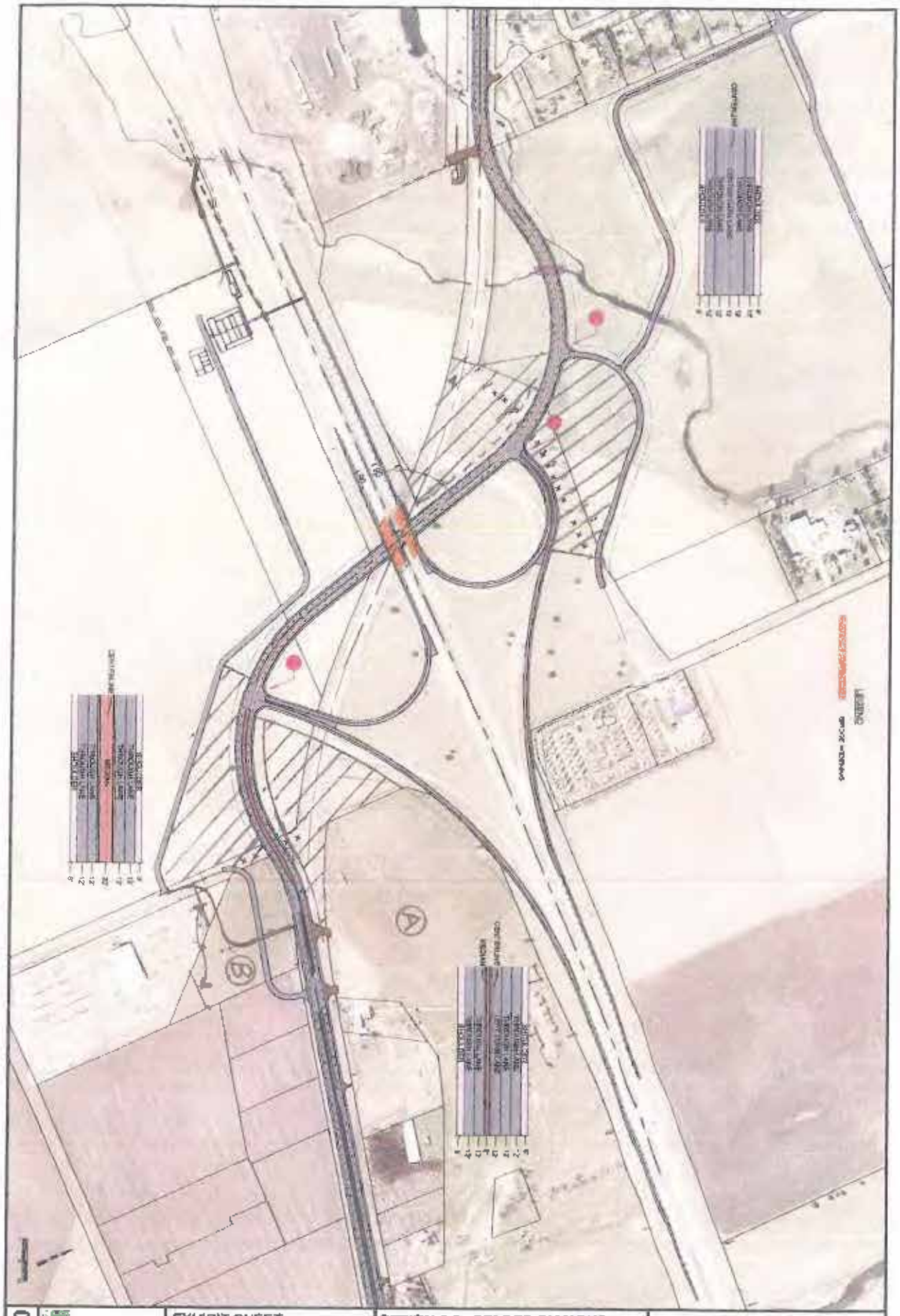
001	EXHIBIT SHEET SD 38 - I90 INTERCHANGE	OPTION 1 - FOLDED DIAMOND-EXISTING ALIGNMENT	SOUTH DAKOTA HIGHWAY 38 CORRIDOR STUDY



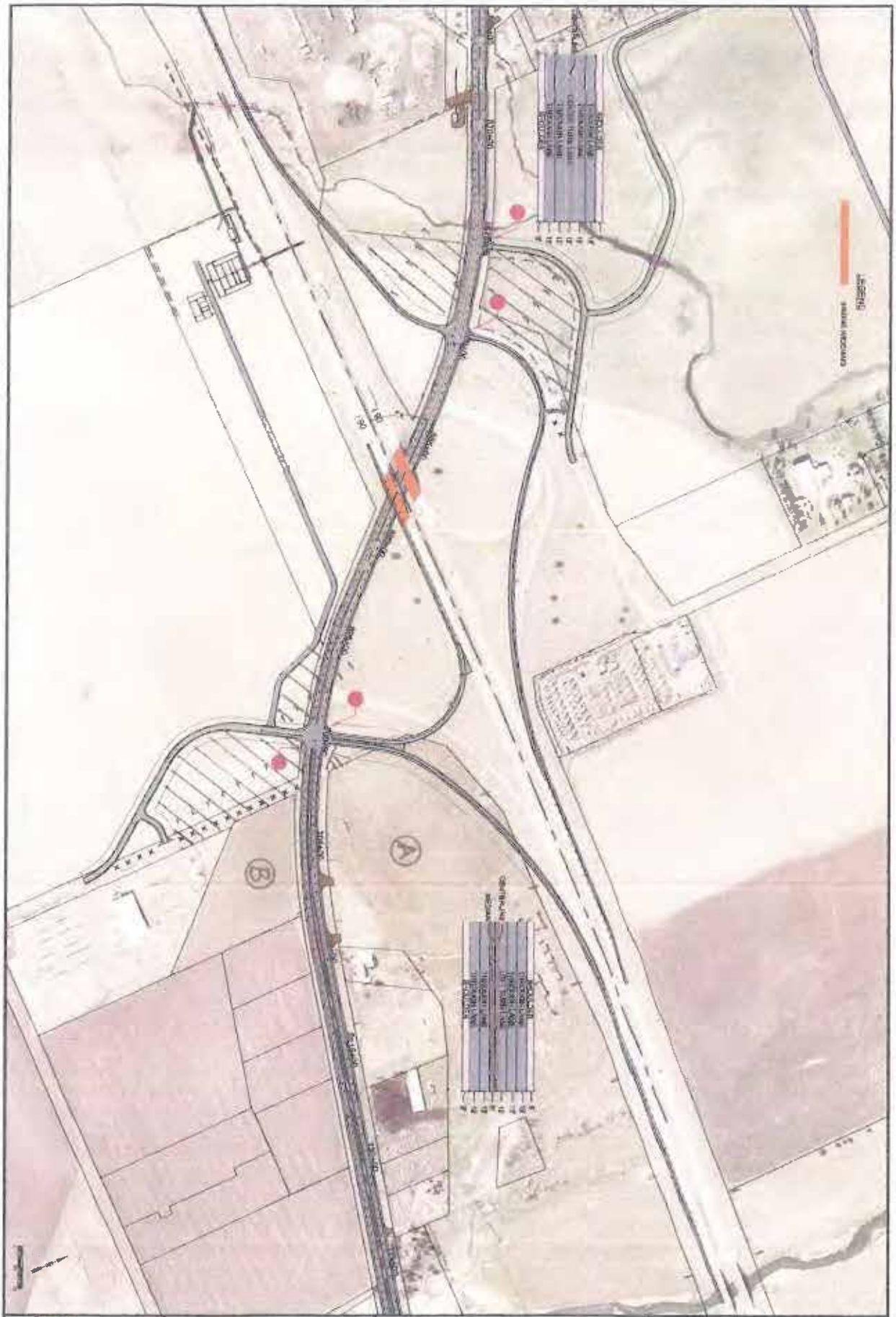
002	EXHIBIT SHEET SD 38 - I90 INTERCHANGE	OPTION 2 - FOLDED DIAMOND - 65 DEGREE SKEW	SOUTH DAKOTA HIGHWAY 38 CORRIDOR STUDY



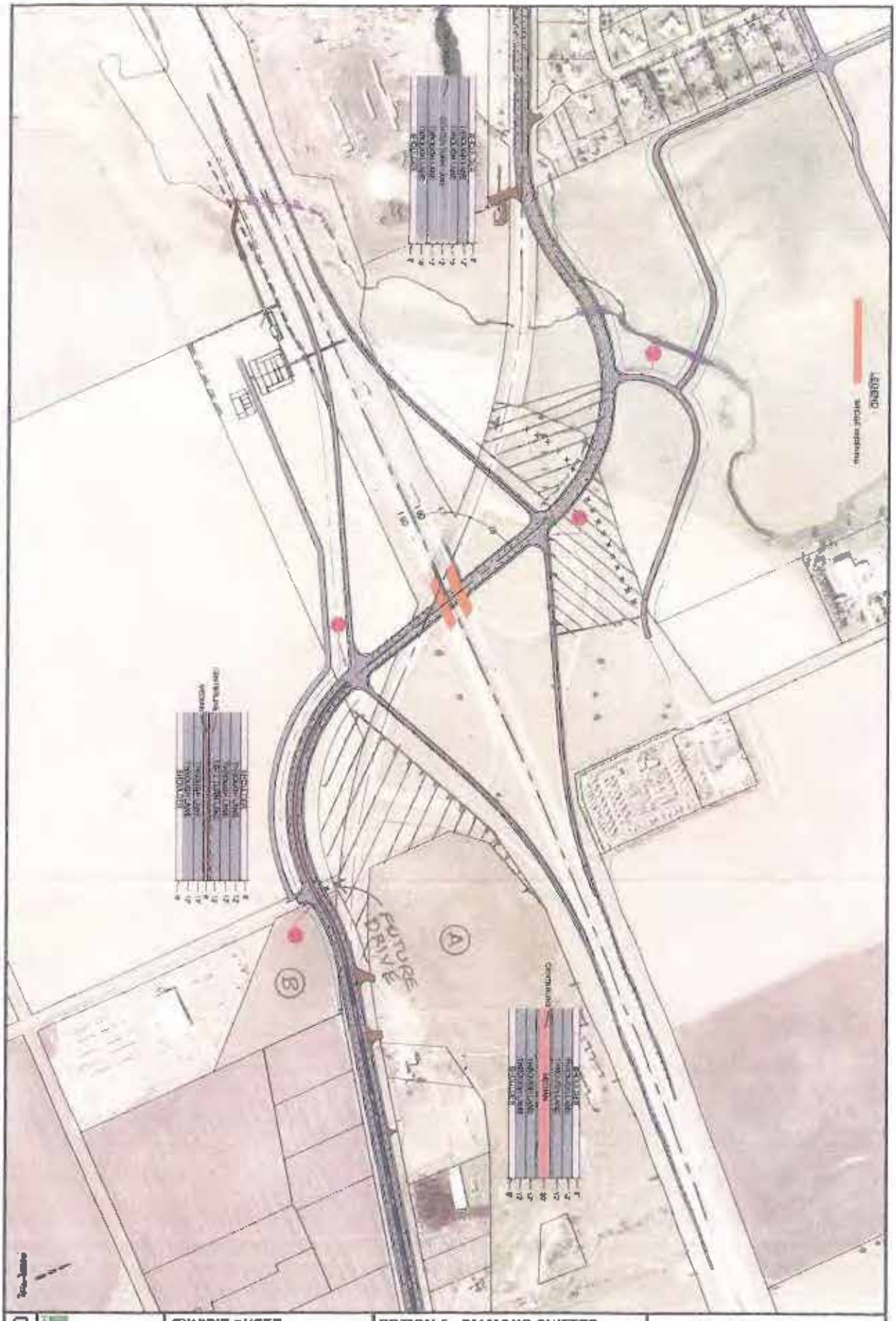
003	EXHIBIT SHEET SD 38 - I90 INTERCHANGE	OPTION 3 - FOLDED DIAMOND 75 DEGREE SKEW	SOUTH DAKOTA HIGHWAY 38 CORRIDOR STUDY



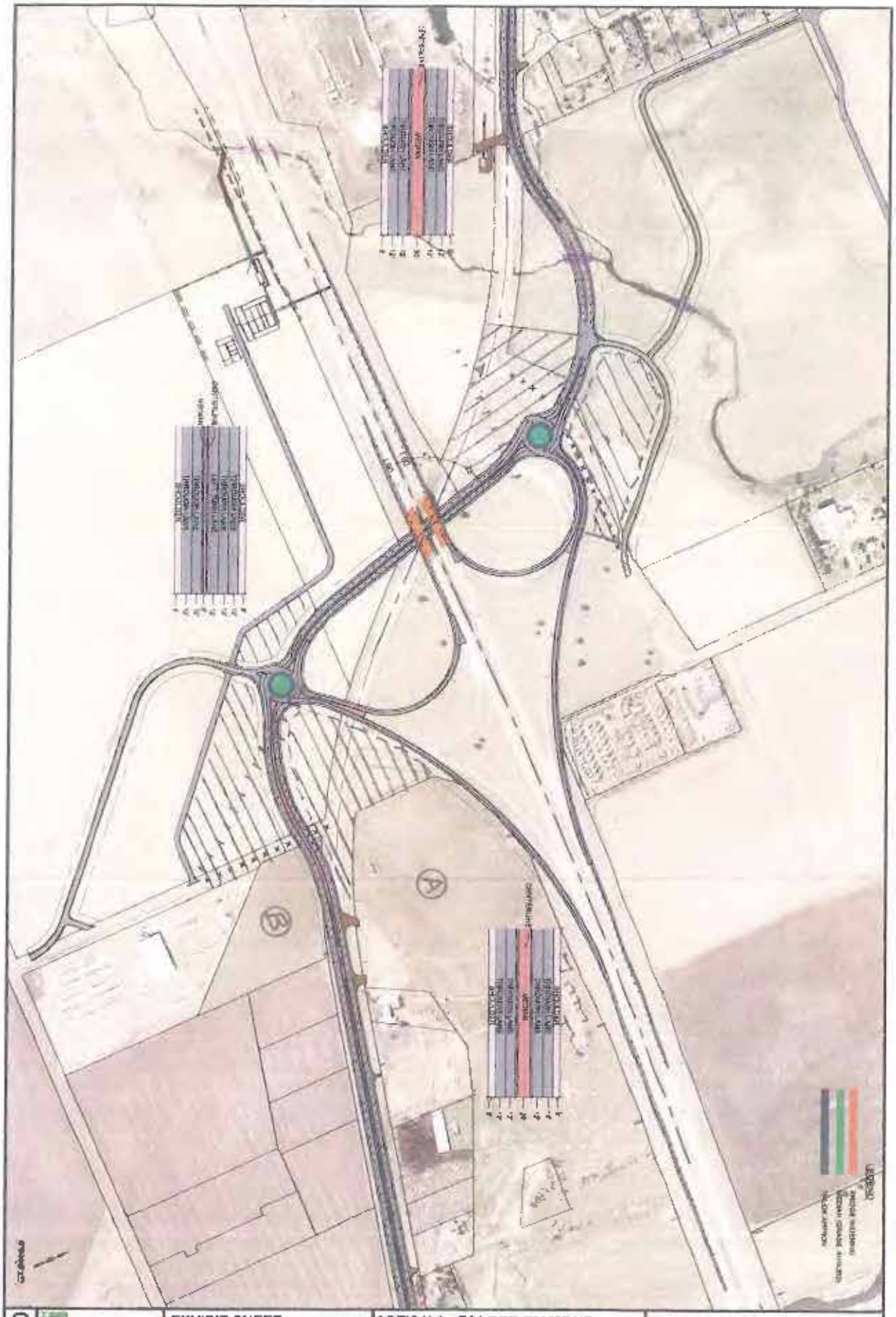
004	EXHIBIT SHEET SD 38 - I90 INTERCHANGE	OPTION 3.2 - FOLDED DIAMOND - 75 DEGREE SKEW - 466TH TIE IN	SOUTH DAKOTA HIGHWAY 38 CORRIDOR STUDY



005	EXHIBIT SHEET SD 38 - 190 INTERCHANGE	OPTION 4 - 3/4 STANDARD DIAMOND	SOUTH DAKOTA HIGHWAY 38 CORRIDOR STUDY



900	EXHIBIT SHEET SD 38 - I90 INTERCHANGE	OPTION 5 - DIAMOND SHIFTED WEST	SOUTH DAKOTA HIGHWAY 38 CORRIDOR STUDY



007	EXHIBIT SHEET SD 38 - I90 INTERCHANGE	OPTION 6 - FOLDED DIAMOND - ROUNDABOUT	SOUTH DAKOTA HIGHWAY 38 CORRIDOR STUDY

Philip Gundvaldson

From: noreply@socialpinpoint.com
Sent: Sunday, March 3, 2024 1:58 PM
To: Thoreen, Timothy; White, Ben
Subject: New response for survey: SD 38 Corridor Study on project: SD 38 Corridor Study

This email came from outside the HR Green organization. Please use caution when clicking on hyperlinks and opening attachments

The following response on survey: SD 38 Corridor Study from an unknown stakeholder was submitted regarding the project: SD 38 Corridor Study

5/4 Complete

1. Tell us about how you relate to the corridor (check all that apply):

I live near Highway 38

I rely on Highway 38 for my daily commute to Sioux Falls

2.How often do you travel on Highway 38?

Daily

3. What would you like improved on Highway 38? Please rank based on high priority and low priority.

Safety on Highway 38:
1 (high)
Traffic Flow:
4
Pedestrian crossin:
5 (low)
Bike options:
5 (low)
Access to or from Interstate 90:
1 (high)
Access to adjacent land use:
2

Safety at intersections:
1 (high)

4.If I could fix one thing about the Highway 38 corridor, it would be:

Morning commute is busy with buses and trucks. Entry to the highway from intersections is an important need, especially when visibility is limited.

Review the Survey response now

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Philip Gundvaldson

From: noreply@socialpinpoint.com
Sent: Wednesday, March 13, 2024 2:22 PM
To: Thoreen, Timothy; White, Ben
Subject: New response for survey: SD 38 Corridor Study on project: SD 38 Corridor Study

This email came from outside the HR Green organization. Please use caution when clicking on hyperlinks and opening attachments

The following response on survey: SD 38 Corridor Study from an unknown stakeholder was submitted regarding the project: SD 38 Corridor Study

5/4 Complete

1. Tell us about how you relate to the corridor (check all that apply):

I rely on Highway 38 for my daily commute to Sioux Falls

I live near Highway 38

2.How often do you travel on Highway 38?

Daily

3. What would you like improved on Highway 38? Please rank based on high priority and low priority.

Safety on Highway 38:
2
Traffic Flow:
1 (high)
Pedestrian crossin:
5 (low)
Bike options:
5 (low)
Access to or from Interstate 90:
2
Access to adjacent land use:
5 (low)

Safety at intersections:
3

4.If I could fix one thing about the Highway 38 corridor, it would be:

Better turn lane options or more lanes between Marion and Ellis Rd

Review the Survey response now

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Unsubscribe From This List | Manage Email Preferences

SD38 Corridor Study

To:	Steve Gramm, SDDOT
From:	Brian Willham, PE, PTOE / Ben White, PE
Subject:	SD Highway 38 – Future Build Concept Traffic Operations and Safety Analysis
Date:	July 19, 2024

Introduction

The purpose of this technical memorandum is to document the future build concept traffic assessment in support of the study being completed along SD 38. This technical report will provide a future year conditions assessment of the highway and each of the study intersections. **Table 1** depicts the eighteen study intersections reviewed as part of the existing conditions assessment and traffic data review.

TABLE 1: SD 38 STUDY INTERSECTIONS

Main Line	Cross Street(s)
SD Highway 38	SD Highway 19 / 457th Avenue
SD Highway 38	459th Avenue
SD Highway 38	I-90 Speedway Entrance
SD Highway 38	Western Avenue / 463rd Avenue
SD Highway 38	Main Avenue
SD Highway 38	Vandemark Avenue
SD Highway 38	2nd Street
SD Highway 38	West Central High School Entrance
SD Highway 38	Railroad Street / 464th Avenue
SD Highway 38	Mickelson Road / 260th Street
SD Highway 38	466th Avenue (North)
SD Highway 38	WB I-90 Exit 390
SD Highway 38	EB I-90 Exit 390
SD Highway 38	466th Avenue (South)
SD Highway 38	County Highway 141 / 468th Avenue
SD Highway 38	County Highway 139 / 469th Avenue
SD Highway 38	La Mesa Drive / 470th Avenue
SD Highway 38	Marion Road

Traffic Forecasting

The existing traffic volume data for the SD 38 corridor was developed from 12-hour count data collected on November 2, 2022, for 17 intersections. To develop future traffic conditions, the Sioux Falls Metropolitan Planning Organization (SFMPO) Travel Demand Model (TDM) and SDDOT GIS data was used to establish the 2050 ADT. Available development site plans were sourced and any planned development trips that had not been included in the TDM were incorporated into the future year forecasted volumes. The growth calculated from the ADT values were used to develop 2050 design year morning (AM) and afternoon (PM) peak hour volumes at study intersections. The estimated interim year 2029 morning (AM) and afternoon (PM) peak hour volumes were developed by process of interpolation using straight-line growth assumptions based on the existing year and future year 2050 traffic volumes. Any adjustments that were necessary to relocate traffic due to intersection modifications within concepts were completed manually. The peak hour volumes were previously used to evaluate the existing condition and

future no-build traffic operations for intersections and highway segments within the study area and the same forecasts will be utilized to evaluate the future build concept conditions.

Traffic Operations Methodology

Intersections

Intersection level of service (LOS) is primarily a function of peak hour turning movement volumes, intersection lane configuration, and traffic control. For intersection analysis, the Highway Capacity Manual (HCM) defines LOS in terms of the average control delay at the intersection in seconds per vehicle. The results of a HCM analysis are typically presented in the form of a letter grade (A-F) that provides a qualitative estimate of the operational efficiency or effectiveness of the corridor. Much like an academic report card, LOS A represents the best range of operating conditions (i.e., motorists experiencing little delay or congestion) and LOS F represents the worst (i.e., extreme delay or severe congestion).

Table 2 defines the control delay range corresponding to each LOS for unsignalized and signalized intersection locations. At intersections, LOS E is considered to be at capacity and typically represents a scenario in which significant queuing is present or traffic signal cycle failure is evident. For unsignalized intersections, the intersection LOS is given by the worst approach LOS. For instance, an intersection with LOS D on one approach and LOS B on the rest would result in LOS D for the intersection.

TABLE 2: LEVEL OF SERVICE FOR CONTROL DELAY (INTERSECTIONS)

Level Of Service	Unsignalized	Traffic Signal
	Control Delay (sec/veh)	Control Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 and ≤ 15	> 10 and ≤ 20
C	> 15 and ≤ 25	> 20 and ≤ 35
D	> 25 and ≤ 35	> 35 and ≤ 55
E	> 35 and ≤ 50	> 55 and ≤ 80
F	> 50	> 80

Source: Highway Capacity Manual, 7th Edition.

Following SDDOT guidance, LOS C is the desired minimum traffic operational goal for intersections in rural environments while LOS D is an acceptable operational goal for intersections in dense urban environments. The intersections within the study area have a desired traffic operational goal of LOS C.

Highways

Two-lane highway LOS is defined by follower density which relates directly to the passing opportunities available to motorists. In two-lane highway analysis, the highway is segmented according to whether passing zones are present or whether passing is prohibited or otherwise unavailable due to geometric limitations. Multilane highway LOS is defined by density which relates to the ability of a motorist to maneuver freely within the traffic stream. For multilane highway analysis, the highway is segmented anywhere that the uniformity of the traffic or roadway conditions change.

Error! Reference source not found. defines the follower density range corresponding to each LOS for two-lane highway segments. On two-lane highways, LOS E is considered to be at capacity. For two-lane highway segments, a LOS B would represent a scenario where some platooning is present with the potential passing demand and passing opportunities balanced while a LOS D would represent a scenario where significant platooning is present and passing demand far exceeds passing opportunities.

TABLE 3: LEVEL OF SERVICE FOR FOLLOWER DENSITY (TWO-LANE HIGHWAYS)

Level Of Service	Speed ≥ 50 mph	Speed < 50 mph
	Follower Density (followers/mi/ln)	Follower Density (followers/mi/ln)
A	≤ 2.0	≤ 2.5
B	> 2.0 - 4.0	> 2.5 – 5.0
C	> 4.0 – 8.0	> 5.0 – 10.0
D	> 8.0 – 12.0	> 10.0 – 15.0
E	> 12.0	> 15.0
F	Demand exceeds capacity	

Source: Highway Capacity Manual, 7th Edition.

Table 4 defines the follower density range corresponding to each LOS for multilane highway segments. On multi-lane highways, LOS E is considered to be at capacity. For multilane highway segments, a LOS B represents a reasonably free-flowing condition with minimal maneuvering restrictions while a LOS D would represent a scenario where speeds begin to decline and freedom to maneuver is limited.

TABLE 4: LEVEL OF SERVICE FOR FOLLOWER DENSITY (MULTILANE HIGHWAYS)

Level Of Service	Free-Flow Speed (mph)	Density (passenger cars/mi/ln)
A		≤ 11.0
B		> 11.0 - 18.0
C		> 18.0 – 26.0
D		> 26.0 – 35.0
E	60	> 35.0 – 40.0
	55	> 35.0 – 41.0
	50	> 35.0 – 43.0
	45	> 35.0 – 45.0
F	60	> 43.0
	55	> 45.0
	50	> 43.0
	45	> 45.0

Source: Highway Capacity Manual, 7th Edition.

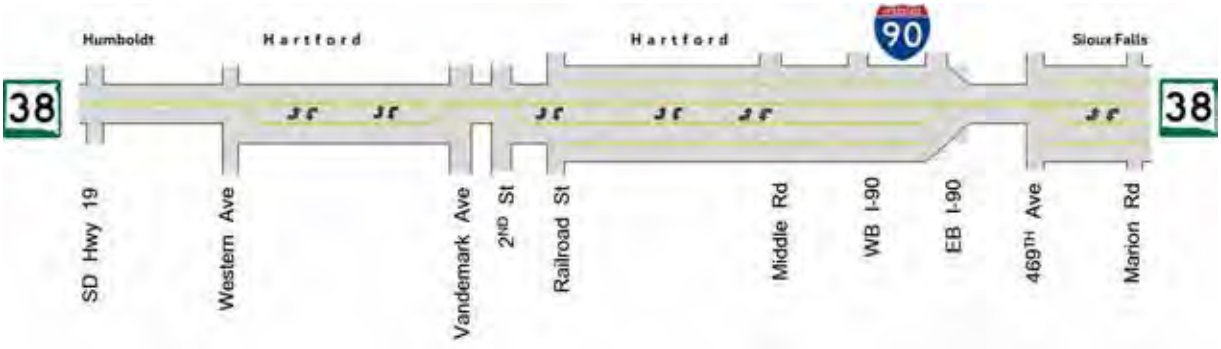
Following SDDOT guidance, LOS C is the desired traffic operational goal for highways in rural environments and LOS D is considered the minimal acceptable operations for highways in urban environments. The SD 38 highway segments within the study area are categorized as rural with federal functional classification of collector between Humboldt to Hartford and categorized as urban with federal functional classification of minor arterial between Hartford to Sioux Falls. The highway segments within the study area have a desired traffic operational goal of LOS C with minimum allowable LOS D between Hartford to Sioux Falls.

Future Build Corridor Concepts

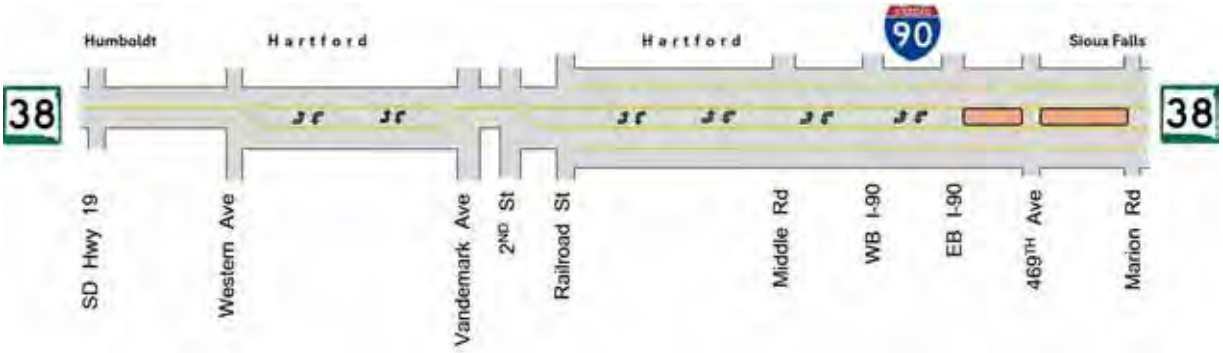
Opening Year 2029 and Design Year 2050 traffic volume forecasts were used to evaluate the traffic operations of intersections and the highway corridor under the build concepts. Operational analysis was completed for the AM and PM peak hour periods of each scenario. Build concept plans are available under separate cover.

The following 3 Build condition scenarios were evaluated:

- **Alternative 1** – two-lane highway from Humboldt to Hartford (as existing), three-lane roadway from Western Avenue to Railroad Street, five-lane roadway (center TWLTL) between Railroad Street to the I-90 Exit 390 interchange, two-lane highway from the I-90 interchange to 469th Ave/County Highway 139, and five-lane roadway (center TWLTL) from 460th Ave/County Highway 139 to Sioux Falls.



- **Alternative 2** – two-lane highway from Humboldt to Hartford (as existing), three-lane roadway from Western Avenue to Railroad Street, five-lane roadway (center TWLTL) between Railroad Street to the I-90 Exit 390 interchange, four-lane highway (raised median) from the I-90 interchange to Sioux Falls.



- **Alternative 3** - two-lane highway from Humboldt to Hartford (as existing), three-lane roadway from Western Avenue to Railroad Street, four-lane roadway (raised median) between Railroad Street to Sioux Falls.

Future Traffic Operations

Traffic operations analysis for the study area intersections included capacity evaluation using the Highway Capacity Manual (HCM) 7th Edition two-lane highway and multilane highway methodologies through use of the Highway Capacity Software (HCS) 2022. Output reports from the HCS2022 software are available in the Appendix.

Traffic operations analysis for the study area SD Highway 38 corridor included capacity evaluation using the Highway Capacity Manual (HCM) 7th Edition two-lane highway and multilane highway methodologies through use of the Highway Capacity Software (HCS) 2022. The highway traffic operations analysis used conceptual highway geometry, future year traffic volumes, and design speeds.

The future year traffic operations analyses does not include a comparison of concepts for the interchange ramp terminal intersections due to that portion of the corridor being removed from this study for inclusion in a future study to document the potential changes to interstate access.

Opening Year 2029

The results of the Opening Year 2029 intersection capacity analyses can be seen in **Table 5**. The results of the two-lane highway and multilane highway corridor capacity analyses can be seen in **Table 6** and **Table 7**.

Under the Opening Year 2029 conditions, the traffic operations analyses showed acceptable operations at all intersections within the study area, under all alternative scenarios, with intersections achieving LOS C or greater during both the AM and PM peak hours.

Under the Opening Year 2029 conditions, the traffic operations analyses showed acceptable operations at all of the highway segments within the study area, under all alternative scenarios, with all segments achieving LOS B or greater during both the AM and PM peak hours.

In general, the Opening Year 2029 condition traffic operations demonstrated acceptable performance measures at all intersections and highway segments within the study area. The desired LOS was realized for all intersections and highway segments during the AM and PM peak hours for all concepts.

TABLE 5: HCM TRAFFIC INTERSECTION OPERATIONS – OPENING 2029

ID #	SD Hwy 38 Cross Street(s)	Intersection Control		NO-BUILD				ALTERNATIVE 1				ALTERNATIVE 2				ALTERNATIVE 3			
				AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
		No Build	Build	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	SD Highway 19 / 457th Avenue	TWSC	TWSC	10.4	B	10.5	B	10.6	B	10.8	B	10.6	B	10.8	B	10.6	B	10.8	B
2	459th Avenue	TWSC	TWSC	10.4	B	11.8	B	7.6	A	11.8	B	7.6	A	11.8	B	7.6	A	11.8	B
3	I-90 Speedway Entrance	TWSC	TWSC	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
4	Western Avenue / 463rd Avenue	TWSC	TWSC	13.5	B	16.5	C	13.0	B	15.2	C	13.0	B	15.2	C	13.0	B	15.2	C
5	Main Avenue	TWSC	TWSC	12.0	B	15.2	C	11.3	B	12.9	B	11.3	B	12.9	B	11.3	B	12.9	B
6	Vandemark Avenue	TWSC	TWSC	12.6	B	12.7	B	12.7	B	12.7	B	12.7	B	12.7	B	12.7	B	12.7	B
7	2nd Street	TWSC	Signal	16.6	C	18.5	C	6.4	A	6.4	A	6.4	A	6.4	A	6.4	A	6.4	A
8	West Central High School Entrance	TWSC	TWSC	12.1	B	12.0	B	10.5	B	10.2	B	10.5	B	10.2	B	10.5	B	10.2	B
9	Railroad Street / 464th Avenue	TWSC	TWSC	18.2	C	19.8	C	17.5	C	18.4	C	17.5	C	18.4	C	17.5	B	18.4	B
10	Mickelson Road / 260th Street	TWSC	Signal	24.8	C	**54.5**	**F**	11.9	B	11.2	B	11.9	B	11.2	B	11.9	B	11.2	B
11	466th Avenue (North)	TWSC	TWSC	19.5	C	20.3	C	11.6	B	13.9	B	11.6	B	13.9	B	16.3	C	18.8	C
12	WB I-90 Exit 390	TWSC	NA	11.5	B	17.7	C	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-
13	EB I-90 Exit 390	TWSC	NA	12.3	B	15.4	C	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-
14	466th Avenue (South)	TWSC	NA	11.9	B	12.3	B	NA	-	NA	-	NA	-	NA	-	NA	-	NA	-
15	County Highway 141 / 468th Avenue	TWSC	TWSC	13.5	B	14.5	B	13.5	B	14.5	B	14.1	B	13.6	B	14.1	B	13.6	B
16	County Highway 139 / 469th Avenue	TWSC	TWSC	14.2	B	18.5	C	11.8	B	14.9	B	11.4	B	15.4	B	11.4	B	15.4	B
17	La Mesa Drive / 470th Avenue	TWSC	TWSC	17.0	C	21.7	C	15.1	C	17.8	C	15.1	B	17.8	B	15.1	B	17.8	B
18	Marion Road	Signal	Signal	16.2	B	20.6	C	16.2	B	20.6	C	16.2	B	20.6	C	16.2	B	20.6	C

Notes: Bold/Highlighted Color indicates a poor LOS

TABLE 6: HCM TRAFFIC HIGHWAY OPERATIONS – OPENING 2029, EASTBOUND SD 38

ID #	Segment Type		NO BUILD				ALTERNATIVE 1				ALTERNATIVE 2				ALTERNATIVE 3			
			AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
	No Build	Build	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS
EB 1	Passing Zone	Passing Zone	0.6	A	0.2	A	0.6	A	0.2	A	0.6	A	0.2	A	0.6	A	0.2	A
EB 2	Passing Constrained	Passing Constrained	0.7	A	0.3	A	0.7	A	0.3	A	0.7	A	0.3	A	0.7	A	0.3	A
EB 3	Passing Zone	Passing Zone	0.5	A	0.2	A	0.5	A	0.2	A	0.5	A	0.2	A	0.5	A	0.2	A
EB 4	Passing Constrained	Passing Constrained	0.7	A	0.3	A	0.7	A	0.3	A	0.7	A	0.3	A	0.7	A	0.3	A
EB 5	Passing Zone	Passing Zone	0.5	A	0.2	A	0.5	A	0.2	A	0.5	A	0.2	A	0.5	A	0.2	A
EB 6	Passing Constrained	Passing Constrained	0.7	A	0.3	A	0.7	A	0.3	A	0.7	A	0.3	A	0.7	A	0.3	A
EB 7	Passing Zone	Passing Zone	0.6	A	0.2	A	0.6	A	0.2	A	0.6	A	0.2	A	0.6	A	0.2	A
EB 8	Passing Zone	Passing Zone	0.5	A	0.2	A	0.5	A	0.2	A	0.5	A	0.2	A	0.5	A	0.2	A
EB 9	Passing Constrained	Passing Constrained	0.7	A	0.3	A	0.7	A	0.3	A	0.7	A	0.3	A	0.7	A	0.3	A
EB 10	Passing Zone	Passing Zone	0.5	A	0.2	A	0.5	A	0.2	A	0.5	A	0.2	A	0.5	A	0.2	A
EB 11	Passing Zone	Passing Zone	0.6	A	0.3	A	0.6	A	0.3	A	0.6	A	0.3	A	0.6	A	0.3	A
EB 12	Passing Constrained	Passing Constrained	0.7	A	0.4	A	0.7	A	0.4	A	0.7	A	0.4	A	0.7	A	0.4	A
EB 13	Passing Zone	Passing Zone	0.6	A	0.3	A	0.6	A	0.3	A	0.6	A	0.3	A	0.6	A	0.3	A
EB 14	Passing Constrained	Passing Constrained	1.3	A	0.7	A	1.3	A	0.7	A	1.3	A	0.7	A	1.3	A	0.7	A
EB 15	Passing Zone	Multilane	3.7	B	1.8	A	**4.7**	**A**	**3.5**	**A**	**4.7**	**A**	**3.5**	**A**	**4.7**	**A**	**3.5**	**A**
EB 16	Passing Constrained		4.1	C	1.9	A												
EB 17	Passing Zone		3.7	B	1.8	A												
EB 18	Passing Zone	Multilane	3.6	B	1.3	A	**4.3**	**A**	**2.9**	**A**	**4.3**	**A**	**2.9**	**A**	**4.3**	**A**	**2.9**	**A**
EB 19	Passing Constrained		3.6	B	1.3	A												
EB 20	Passing Constrained	Multilane	3.8	B	1.4	A	**4.6**	**A**	**2.9**	**A**	**4.6**	**A**	**2.9**	**A**	**4.6**	**A**	**2.9**	**A**
EB 21	Passing Constrained	Multilane	4.0	C	1.7	A	**4.4**	**A**	**2.8**	**A**	**4.4**	**A**	**2.8**	**A**	**4.4**	**A**	**2.8**	**A**
EB 22	Passing Constrained	NA	1.2	A	1.0	A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EB 23	Passing Constrained	Multilane[2,3]	1.3	A	1.0	A	1.3	A	1.0	A	**2.3**	**A**	**2.0**	**A**	**2.3**	**A**	**2.0**	**A**
EB 24	Passing Zone		1.1	A	0.9	A	1.1	A	0.9	A								
EB 25	Passing Constrained		1.2	A	1.0	A	1.2	A	1.0	A								
EB 26	Passing Zone		1.1	A	0.8	A	1.1	A	0.8	A								
EB 27	Passing Constrained		1.3	A	1.0	A	1.3	A	1.0	A								
EB 28	Passing Zone		1.1	A	0.9	A	1.1	A	0.9	A								
EB 29	Passing Zone	Multilane[2,3]	1.5	A	1.2	A	1.5	A	1.2	A	**2.4**	**A**	**2.2**	**A**	**2.4**	**A**	**2.2**	**A**
EB 30	Passing Constrained		1.6	A	1.3	A	1.6	A	1.3	A								
EB 31	Passing Zone		1.4	A	1.2	A	1.4	A	1.2	A								
EB 32	Passing Constrained		1.6	A	1.3	A	1.6	A	1.3	A								
EB 33	Passing Constrained	Multilane	4.2	C	1.3	A	**3.6**	**A**	**2.2**	**A**	**3.6**	**A**	**2.2**	**A**	**3.6**	**A**	**2.2**	**A**
EB 34	Passing Zone		3.9	B	1.3	A												
EB 35	Passing Constrained		4.0	C	1.2	A												

Notes: Bold indicates Multilane Highway
Highlighted Color indicates a poor LOS
NA indicates Segment Removed for Build Conditions
Multilane[2,3] indicates segment type for Alternative 2 and 3

TABLE 7: HCM TRAFFIC HIGHWAY OPERATIONS – OPENING 2029, WESTBOUND SD 38

ID #	Segment Type		NO BUILD				ALTERNATIVE 1				ALTERNATIVE 2				ALTERNATIVE 3			
			AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
	No Build	Build	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS
WB 1	Passing Constrained	Multilane	0.7	A	4.4	C	1.6	A	3.8	A	1.6	A	3.8	A	1.6	A	3.8	A
WB 2	Passing Zone		0.7	A	4.2	C												
WB 3	Passing Constrained		0.8	A	2.1	B												
WB 4	Passing Zone	Multilane[2,3]	0.8	A	2.1	B	0.8	A	2.1	B	**1.9**	**A**	**2.8**	**A**	**1.9**	**A**	**2.8**	**A**
WB 5	Passing Constrained		0.7	A	2.0	A	0.7	A	2.0	A								
WB 6	Passing Zone		0.8	A	2.1	B	0.8	A	2.1	B								
WB 7	Passing Constrained		0.6	A	1.5	A	0.6	A	1.5	A								
WB 8	Passing Constrained	Multilane[2,3]	0.7	A	1.7	A	0.7	A	1.7	A	**1.7**	**A**	**2.7**	**A**	**1.6**	**A**	**2.5**	**A**
WB 9	Passing Zone		0.6	A	1.4	A	0.6	A	1.4	A								
WB 10	Passing Constrained		0.7	A	1.6	A	0.7	A	1.6	A								
WB 11	Passing Zone		0.6	A	1.5	A	0.6	A	1.5	A								
WB 12	Passing Constrained		0.7	A	1.7	A	0.7	A	1.7	A								
WB 13	Passing Constrained		0.7	A	1.7	A	0.7	A	1.7	A								
WB 14	Passing Constrained	NA	0.9	A	2.1	B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
WB 15	Passing Constrained	Multilane	0.8	A	1.7	A	**1.8**	**A**	**3.0**	**A**	**1.8**	**A**	**3.0**	**A**	**1.8**	**A**	**3.0**	**A**
WB 16	Passing Constrained	Multilane	1.5	A	5.1	C	**3.1**	**A**	**5.5**	**A**	**3.1**	**A**	**5.5**	**A**	**3.1**	**A**	**5.5**	**A**
WB 17	Passing Constrained	Multilane	1.3	A	4.9	C	**2.9**	**A**	**5.3**	**A**	**2.9**	**A**	**5.3**	**A**	**2.9**	**A**	**5.3**	**A**
WB 18	Passing Constrained		1.4	A	5.1	C												
WB 19	Passing Zone		1.3	A	4.8	C												
WB 20	Passing Constrained		1.4	A	5.1	C												
WB 21	Passing Constrained	Multilane	1.9	A	5.1	C	**3.4**	**A**	**5.6**	**A**	**3.4**	**A**	**5.6**	**A**	**3.4**	**A**	**5.6**	**A**
WB 22	Passing Zone		1.7	A	4.1	C												
WB 23	Passing Zone	Passing Zone	0.3	A	0.7	A	0.3	A	0.7	A	0.3	A	0.7	A	0.3	A	0.7	A
WB 24	Passing Constrained	Passing Constrained	0.3	A	0.7	A	0.3	A	0.7	A	0.3	A	0.7	A	0.3	A	0.7	A
WB 25	Passing Constrained	Passing Constrained	0.3	A	0.6	A	0.3	A	0.6	A	0.3	A	0.6	A	0.3	A	0.6	A
WB 26	Passing Zone	Passing Zone	0.3	A	0.8	A	0.3	A	0.8	A	0.3	A	0.8	A	0.3	A	0.8	A
WB 27	Passing Zone	Passing Zone	0.3	A	0.6	A	0.3	A	0.6	A	0.3	A	0.6	A	0.3	A	0.6	A
WB 28	Passing Zone	Passing Zone	0.3	A	0.8	A	0.3	A	0.8	A	0.3	A	0.8	A	0.3	A	0.8	A
WB 29	Passing Zone	Passing Zone	0.3	A	0.8	A	0.3	A	0.8	A	0.3	A	0.8	A	0.3	A	0.8	A
WB 30	Passing Constrained	Passing Constrained	0.3	A	0.6	A	0.3	A	0.6	A	0.3	A	0.6	A	0.3	A	0.6	A
WB 31	Passing Zone	Passing Zone	0.3	A	0.8	A	0.3	A	0.8	A	0.3	A	0.8	A	0.3	A	0.8	A
WB 32	Passing Constrained	Passing Constrained	0.3	A	0.7	A	0.3	A	0.7	A	0.3	A	0.7	A	0.3	A	0.7	A
WB 33	Passing Constrained	Passing Constrained	0.3	A	0.8	A	0.3	A	0.8	A	0.3	A	0.8	A	0.3	A	0.8	A
WB 34	Passing Zone	Passing Zone	0.3	A	0.7	A	0.3	A	0.7	A	0.3	A	0.7	A	0.3	A	0.7	A
WB 35	Passing Constrained	Passing Constrained	0.5	A	1.0	A	0.5	A	1.0	A	0.5	A	1.0	A	0.5	A	1.0	A

Notes: Bold indicates Multilane Highway
Highlighted Color indicates a poor LOS
NA indicates Segment Removed for Build Conditions
Multilane[2,3] indicates segment type for Alternative 2 and 3

8

Design Year 2050

The results of the Design Year 2050 intersection capacity analyses can be seen in **Table 8**. The results of the two-lane highway and multilane highway corridor capacity analyses can be seen in **Table 9** and **Notes:** Bold indicates Multilane Highway

Highlighted Color indicates a poor LOS
NA indicates Segment Removed for Build Conditions
Multilane2,3 indicates segment type for Alternative 2 and 3

Table 10.

Under the Design Year 2050 conditions, the traffic operations analyses showed acceptable operations at all intersections within the study area, with intersections achieving LOS C or greater during both the AM and PM peak hours. To achieve LOS C goals, it was necessary to convert several intersections from two-way stop control to signalized operations. The following intersections were analyzed under traffic signal control:

- SD 38 & Western Avenue/463rd Avenue
- SD 38 & 2nd Street
- SD 38 & Railroad Street/464th Avenue
- SD 38 & Mickelson Road/260th Street
- SD 38 & County Highway 139/469th Avenue
- SD 38 & La Mesa Drive/470th Avenue

Under the Design Year 2050 conditions, the traffic operations analyses showed acceptable operations at all of the highway segments within the study area, under all alternative scenarios, with all segments achieving LOS C or greater during both the AM and PM peak hours.

In general, the Design Year 2050 condition traffic operations demonstrated acceptable performance measures at all intersections and highway segments within the study area. The desired LOS was realized for all intersections and highway segments during the AM and PM peak hours for all concepts.

TABLE 8: HCM TRAFFIC INTERSECTION OPERATIONS – DESIGN 2050

ID #	SD Hwy 38 Cross Street(s)	Intersection Control		NO BUILD				ALTERNATIVE 1				ALTERNATIVE 2				ALTERNATIVE 3			
				AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
		No Build	Build	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	SD Highway 19 / 457th Avenue	TWSC	TWSC	12.2	B	12.3	B	12.2	B	12.6	B	12.2	B	12.6	B	12.2	B	12.6	B
2	459th Avenue	TWSC	TWSC	11.6	B	13.5	B	11.7	B	13.5	B	11.7	B	13.5	B	11.7	B	13.5	B
3	I-90 Speedway Entrance	TWSC	TWSC	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
4	Western Avenue / 463rd Avenue	TWSC	Signal	21.5	C	63.1	**F**	11.4	B	12.1	B	11.4	B	12.1	B	11.4	B	12.1	B
5	Main Avenue	TWSC	TWSC	14.4	B	25.5	**D**	13.2	B	17.6	C	13.2	B	17.6	C	13.2	B	17.6	C
6	Vandemark Avenue	TWSC	TWSC	15.4	C	16.8	C	15.5	C	16.9	C	15.5	C	16.9	C	15.5	C	16.9	C
7	2nd Street	TWSC	Signal	31.1	C	38.3	**E**	8.8	A	7.2	A	8.8	A	7.2	A	8.8	A	7.2	A
8	West Central High School Entrance	TWSC	TWSC	15.4	C	14.8	B	11.9	B	11.3	B	11.9	B	11.3	B	11.9	B	11.3	B
9	Railroad Street / 464th Avenue	TWSC	Signal	43.6	**E**	43.8	**E**	11.1	B	8.4	A	11.1	B	8.4	A	11.1	B	8.4	A
10	Mickelson Road / 260th Street	TWSC	Signal	19.2	B	21.3	C	16.7	B	18.2	B	16.7	B	18.2	B	16.7	B	18.2	B
11	466th Avenue (North)	TWSC	TWSC	31.6	**D**	31.4	**D**	12.9	B	17.3	C	12.9	B	17.3	C	12.9	B	17.3	C
12	WB I-90 Exit 390	-	-	14.9	B	66.1	**F**	-	-	-	-	-	-	-	-	-	-	-	-
13	EB I-90 Exit 390	-	-	18.4	C	30.0	**D**	-	-	-	-	-	-	-	-	-	-	-	-
14	466th Avenue (South)	-	-	13.9	B	15.7	C	-	-	-	-	-	-	-	-	-	-	-	-
15	County Highway 141 / 468th Avenue	TWSC	TWSC	16.7	C	21.3	C	16.9	C	21.3	C	17.9	C	18.8	C	17.9	C	18.8	C
16	County Highway 139 / 469th Avenue	TWSC	Signal	43.1	**E**	266.3	**F**	19.5	B	13.7	B	17.6	B	10.8	B	17.6	B	10.8	B
17	La Mesa Drive / 470th Avenue	TWSC	Signal	39.2	**E**	81.5	**F**	10.6	B	16.8	B	10.6	B	16.8	B	10.6	B	16.8	B
18	Marion Road	TWSC	Signal	19.1	B	32.1	C	19.1	B	32.1	C	19.1	B	32.1	C	19.1	B	32.1	C

Notes: Bold/Highlighted Color indicates a poor LOS

TABLE 9: HCM TRAFFIC HIGHWAY OPERATIONS – DESIGN 2050, EASTBOUND SD 38

ID #	Segment Type		NO BUILD				ALTERNATIVE 1				ALTERNATIVE 2				ALTERNATIVE 3			
			AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
	No Build	Build	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS
EB 1	Passing Zone	Passing Zone	1.2	A	0.6	A	1.2	A	0.6	A	1.2	A	0.6	A	1.2	A	0.6	A
EB 2	Passing Constrained	Passing Constrained	1.3	A	0.6	A	1.3	A	0.6	A	1.3	A	0.6	A	1.3	A	0.6	A
EB 3	Passing Zone	Passing Zone	1.1	A	0.5	A	1.1	A	0.5	A	1.1	A	0.5	A	1.1	A	0.5	A
EB 4	Passing Constrained	Passing Constrained	1.3	A	0.6	A	1.3	A	0.6	A	1.3	A	0.6	A	1.3	A	0.6	A
EB 5	Passing Zone	Passing Zone	1.1	A	0.5	A	1.1	A	0.5	A	1.1	A	0.5	A	1.1	A	0.5	A
EB 6	Passing Constrained	Passing Constrained	1.3	A	0.6	A	1.3	A	0.6	A	1.3	A	0.6	A	1.3	A	0.6	A
EB 7	Passing Zone	Passing Zone	1.2	A	0.6	A	1.2	A	0.6	A	1.2	A	0.6	A	1.2	A	0.6	A
EB 8	Passing Zone	Passing Zone	1.1	A	0.6	A	1.1	A	0.6	A	1.1	A	0.6	A	1.1	A	0.6	A
EB 9	Passing Constrained	Passing Constrained	1.3	A	0.7	A	1.3	A	0.7	A	1.3	A	0.7	A	1.3	A	0.7	A
EB 10	Passing Zone	Passing Zone	1.1	A	0.5	A	1.1	A	0.5	A	1.1	A	0.5	A	1.1	A	0.5	A
EB 11	Passing Zone	Passing Zone	1.1	A	0.5	A	1.1	A	0.5	A	1.1	A	0.5	A	1.1	A	0.5	A
EB 12	Passing Constrained	Passing Constrained	1.3	A	0.7	A	1.3	A	0.7	A	1.3	A	0.7	A	1.3	A	0.7	A
EB 13	Passing Zone	Passing Zone	1.1	A	0.5	A	1.1	A	0.5	A	1.1	A	0.5	A	1.1	A	0.5	A
EB 14	Passing Constrained	Passing Constrained	2.1	B	1.1	A	2.1	B	1.1	A	2.1	B	1.1	A	2.1	B	1.1	A
EB 15	Passing Zone	Multilane Highway	6.7	C	3.4	B	**6.7**	**A**	**4.8**	**A**	**6.7**	**A**	**4.8**	**A**	**6.7**	**A**	**4.8**	**A**
EB 16	Passing Constrained		7.1	C	3.5	B												
EB 17	Passing Zone		6.7	C	3.4	B												
EB 18	Passing Zone	Multilane Highway	8.1	D	3.3	B	**6.0**	**A**	**4.0**	**A**	**6.0**	**A**	**4.0**	**A**	**6.0**	**A**	**4.0**	**A**
EB 19	Passing Constrained		7.9	C	3.1	B												
EB 20	Passing Constrained	Multilane Highway	8.3	D	3.4	B	**6.4**	**A**	**4.0**	**A**	**6.4**	**A**	**4.0**	**A**	**6.4**	**A**	**4.0**	**A**
EB 21	Passing Constrained	Multilane Highway	9.2	D	4.2	C	**6.2**	**A**	**4.0**	**A**	**6.2**	**A**	**4.0**	**A**	**6.2**	**A**	**4.0**	**A**
EB 22	Passing Constrained	NA	3.2	B	2.9	B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EB 23	Passing Constrained	Multilane Highway[2,3]	2.4	B	1.9	A	3.0	B	2.3	B	**3.2**	**A**	**2.8**	**A**	**3.2**	**A**	**2.8**	**A**
EB 24	Passing Zone		2.2	B	1.8	A	2.8	B	2.2	B								
EB 25	Passing Constrained		2.3	B	1.9	A	2.9	B	2.3	B								
EB 26	Passing Zone		2.1	B	1.7	A	2.7	B	2.1	B								
EB 27	Passing Constrained		2.4	B	1.9	A	3.0	B	2.3	B								
EB 28	Passing Zone		2.2	B	1.8	A	2.8	B	2.2	B								
EB 29	Passing Zone	Multilane Highway[2,3]	3.3	B	2.8	B	3.4	B	3.0	B	**3.5**	**A**	**3.2**	**A**	**3.5**	**A**	**3.2**	**A**
EB 30	Passing Constrained		3.5	B	2.9	B	3.6	B	3.1	B								
EB 31	Passing Zone		3.2	B	2.8	B	3.3	B	2.9	B								
EB 32	Passing Constrained		3.5	B	2.9	B	3.6	B	3.0	B								
EB 33	Passing Constrained	Multilane Highway	8.2	D	2.9	B	**6.2**	**A**	**3.1**	**A**	**6.2**	**A**	**3.1**	**A**	**6.2**	**A**	**3.1**	**A**
EB 34	Passing Zone		8.0	C	2.8	B												
EB 35	Passing Constrained		8.0	C	2.7	B												

Notes: Bold indicates Multilane Highway
Highlighted Color indicates a poor LOS
NA indicates Segment Removed for Build Conditions
Multilane[2,3] indicates segment type for Alternative 2 and 3

TABLE 10: HCM TRAFFIC HIGHWAY OPERATIONS – DESIGN 2050, WESTBOUND SD 38

ID #	Segment Type		NO BUILD				ALTERNATIVE 1				ALTERNATIVE 2				ALTERNATIVE 3			
			AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR		AM PEAK HOUR		PM PEAK HOUR	
	No Build	Build	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS	Density	LOS
WB 1	Passing Constrained	Multilane	1.6	A	8.7	D	**2.4**	**A**	**5.6**	**A**	**2.4**	**A**	**5.6**	**A**	**2.4**	**A**	**5.6**	**A**
WB 2	Passing Zone		1.5	A	8.5	D												
WB 3	Passing Constrained		1.8	A	4.4	C												
WB 4	Passing Zone	Multilane[2,3]	1.8	A	4.4	C	2.0	A	4.7	C	**2.7**	**A**	**4.1**	**A**	**2.7**	**A**	**4.1**	**A**
WB 5	Passing Constrained		1.7	A	4.2	C	1.8	A	4.5	C								
WB 6	Passing Zone		1.8	A	4.4	C	2.0	A	4.7	C								
WB 7	Passing Constrained		1.3	A	2.9	B	1.8	A	4.4	C								
WB 8	Passing Constrained	Multilane[2,3]	1.4	A	3.2	B	1.7	A	3.7	B	**2.4**	**A**	**3.7**	**A**	**2.4**	**A**	**3.7**	**A**
WB 9	Passing Zone		1.3	A	2.8	B	1.5	A	3.4	B								
WB 10	Passing Constrained		1.4	A	3.1	B	1.7	A	3.6	B								
WB 11	Passing Zone		1.3	A	2.9	B	1.6	A	3.5	B								
WB 12	Passing Constrained		1.4	A	3.2	B	1.7	A	3.7	B								
WB 13	Passing Constrained		1.4	A	3.2	B	1.7	A	3.7	B								
WB 14	Passing Constrained	NA	2.4	B	5.4	C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
WB 15	Passing Constrained	Multilane	1.9	A	4.3	C	**2.5**	**A**	**4.2**	**A**	**2.5**	**A**	**4.2**	**A**	**2.5**	**A**	**4.2**	**A**
WB 16	Passing Constrained	Multilane	3.3	B	10.9	D	**4.3**	**A**	**7.6**	**A**	**4.3**	**A**	**7.6**	**A**	**4.3**	**A**	**7.6**	**A**
WB 17	Passing Constrained	Multilane	3.0	B	10.5	D	**3.9**	**A**	**7.6**	**A**	**3.9**	**A**	**7.6**	**A**	**3.9**	**A**	**7.6**	**A**
WB 18	Passing Constrained		3.2	B	10.8	D												
WB 19	Passing Zone		3.1	B	10.7	D												
WB 20	Passing Constrained		3.2	B	10.8	D												
WB 21	Passing Constrained	Multilane	3.3	B	8.7	D	**4.6**	**A**	**7.9**	**A**	**4.6**	**A**	**7.9**	**A**	**4.6**	**A**	**7.9**	**A**
WB 22	Passing Zone		3.1	B	7.4	C												
WB 23	Passing Zone	Passing Zone	0.6	A	1.4	A	0.6	A	1.4	A	0.6	A	1.4	A	0.6	A	1.4	A
WB 24	Passing Constrained	Passing Constrained	0.6	A	1.4	A	0.6	A	1.4	A	0.6	A	1.4	A	0.6	A	1.4	A
WB 25	Passing Constrained	Passing Constrained	0.6	A	1.4	A	0.6	A	1.4	A	0.6	A	1.4	A	0.6	A	1.4	A
WB 26	Passing Zone	Passing Zone	0.7	A	1.7	A	0.7	A	1.7	A	0.7	A	1.7	A	0.7	A	1.7	A
WB 27	Passing Zone	Passing Zone	0.6	A	1.4	A	0.6	A	1.4	A	0.6	A	1.4	A	0.6	A	1.4	A
WB 28	Passing Zone	Passing Zone	0.7	A	1.7	A	0.7	A	1.7	A	0.7	A	1.7	A	0.7	A	1.7	A
WB 29	Passing Zone	Passing Zone	0.7	A	1.7	A	0.7	A	1.7	A	0.7	A	1.7	A	0.7	A	1.7	A
WB 30	Passing Constrained	Passing Constrained	0.6	A	1.4	A	0.6	A	1.4	A	0.6	A	1.4	A	0.6	A	1.4	A
WB 31	Passing Zone	Passing Zone	0.7	A	1.7	A	0.7	A	1.7	A	0.7	A	1.7	A	0.7	A	1.7	A
WB 32	Passing Constrained	Passing Constrained	0.6	A	1.5	A	0.6	A	1.5	A	0.6	A	1.5	A	0.6	A	1.5	A
WB 33	Passing Constrained	Passing Constrained	0.7	A	1.7	A	0.7	A	1.7	A	0.7	A	1.7	A	0.7	A	1.7	A
WB 34	Passing Zone	Passing Zone	0.6	A	1.5	A	0.6	A	1.5	A	0.6	A	1.5	A	0.6	A	1.5	A
WB 35	Passing Constrained	Passing Constrained	0.9	A	2.1	B	0.9	A	2.1	B	0.9	A	2.1	B	0.9	A	2.1	B

Notes: Bold indicates Multilane Highway
Highlighted Color indicates a poor LOS
NA indicates Segment Removed for Build Conditions
Multilane[2,3] indicates segment type for Alternative 2 and 3

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Predictive Safety Analysis

Safety analysis of locations within the SD Highway 38 study corridor area of influence was completed for the Build scenarios. Predictive crash analysis was completed using the Interactive Highway Safety Design Model (IHSDM) Crash Prediction analysis tool to evaluate the safety effects and predict the expected change in crashes between design year scenarios. IHSDM reports are available in the Appendix.

The crash analysis determined the predicted crash frequency within the SD Highway 38 area of influence resulting from the Build roadway conditions. Predicted crash frequency is a measure of safety performance based on segments or intersections of a common facility type. Predictive crash frequency accounts for changes in traffic volume, and roadway characteristics, and is appropriate for comparing the variations in crash frequency that may result from added travel lanes or other geometric modifications.

A summary of the predicted crashes for the SD Highway 38 segments between the intersections with SD Highway 19 and Marion Road are provided in **Table 11**. The predicted crash analysis showed a significant reduction in crashes for build scenarios compared to the no-build scenario (two-lane highway). The addition of lanes, wider shoulder widths, median, and decrease in density are some of the factors causing the reduction in crashes for the build scenarios. The predicted frequency of crashes between build scenarios is consistent between the SD Highway 19 and Railroad Street segments, where there were no major geometric changes, with noticeable differences between the Railroad Street to Marion Road segments where the Build scenarios represented changes to the number of lanes, shoulder width and/or median type.

Furthermore, Alternative 3 would be safer compared to Alternatives 1 and 2. With higher volumes of opposing traffic, raised medians limit left turn movements to certain concentrated points, thereby reducing conflicting movements between vehicles. The predicted crash analysis demonstrated the potential for crash reductions in Alternative 3 with a raised median from Railroad Street to Marion Road with a reduction of 194.7 total segment crashes compared to Alternative 1 with TWLTL and a two-lane cross section between Railroad Street and Marion Road. The predictive crash analysis also showed that Alternative 2 with a TWLTL and raised median cross section between Railroad Street and Marion Road would result in a reduction of 160.34 total segment crashes compared to Alternative 1.

A summary of the predicted crashes for the SD Highway 38 intersections are provided in **Table 12**. At study intersections, the predicted crash frequency was consistent from SD Highway 19 to Railroad Street, where no differences between the corridor or intersection geometrics existed. There were noticeable changes in the predicted crash frequency at the County Highway 141/468th Avenue intersection and the County Highway 139/469th Avenue where the influence of the corridor can be seen to also have an effect on the safety at these intersections resulting in a reduction of 89.9 total crashes with the five-lane cross section.

TABLE 11: SD 38 SEGMENT CRASH FREQUENCY

Location		Segment Length (Miles)	No Build Predicted Crashes (2025-2050)				Alternative 1 Predicted Crashes (2025-2050)				Alternative 2 Predicted Crashes (2025-2050)				Alternative 3 Predicted Crashes (2025-2050)			
			Total Crashes	Total Crashes/ Year	FI Crashes/ Year	PDO Crashes/ Year	Total Crashes	Total Crashes/ Year	FI Crashes/ Year	PDO Crashes/ Year	Total Crashes	Total Crashes/ Year	FI Crashes/ Year	PDO Crashes/ Year	Total Crashes	Total Crashes/ Year	FI Crashes/ Year	PDO Crashes/ Year
Segment 1:	SD Highway 19 to 459th Avenue	2.05	47.76	1.83	0.58	1.24	42.37	1.62	0.52	1.10	42.37	1.62	0.52	1.10	42.37	1.62	0.52	1.10
Segment 2:	459th Avenue to Western Avenue	4.08	94.87	3.64	1.17	2.47	84.92	3.26	1.04	2.21	84.92	3.26	1.04	2.21	84.92	3.26	1.04	2.21
Segment 3:	Western Avenue to Main Avenue	0.24	18.36	0.70	0.22	0.47	18.09	0.69	0.22	0.47	18.09	0.69	0.22	0.47	18.09	0.69	0.22	0.47
Segment 4:	Main Avenue to Vandemark Avenue	0.31	24.91	0.95	0.30	0.65	24.71	0.95	0.30	0.65	24.71	0.95	0.30	0.65	24.71	0.95	0.30	0.65
Segment 5:	Vandemark Avenue to 2nd Street	0.47	39.24	1.50	0.48	1.02	32.72	1.25	0.41	0.85	32.72	1.25	0.41	0.85	32.72	1.25	0.41	0.85
Segment 7:	2nd Street to West Central High School	0.06	5.85	0.22	0.07	0.15	5.62	0.22	0.07	0.15	5.62	0.22	0.07	0.15	5.62	0.22	0.07	0.15
Segment 8:	West Central High School Entrance to Railroad Street	0.20	18.27	0.70	0.22	0.47	15.41	0.59	0.19	0.41	15.41	0.59	0.19	0.41	15.41	0.59	0.19	0.41
Segment 9:	Railroad Street to Mickelson Road	0.45	65.00	2.50	0.80	1.69	41.66	1.60	0.94	0.66	32.96	1.27	0.74	0.52	24.80	0.96	0.49	0.46
Segment 10:	Mickelson Road to 466th Avenue (North)	1.40	165.99	6.38	2.04	4.33	175.21	6.73	3.89	2.84	130.47	5.00	2.90	2.11	106.78	4.10	2.08	2.01
Segment 11:	466th Avenue (North) to WB I-90 Ramps	0.07	7.14	0.27	0.08	0.18	13.54	0.52	0.16	0.35	6.68	0.25	0.15	0.10	3.97	0.15	0.07	0.07
Segment 12:	WB I-90 Ramps to EB I-90 Ramps	0.28	21.29	0.81	0.26	0.55	22.97	0.88	0.28	0.60	17.65	0.67	0.40	0.27	18.13	0.69	0.37	0.33
Segment 13:	EB I-90 Ramps to 466th Avenue (South)	0.07	6.62	0.25	0.08	0.17	-	-	-	-	-	-	-	-	-	-	-	-
Segment 14:	466th Avenue (South) to County Highway 141	2.02	132.89	5.11	1.64	3.47	117.62	4.52	1.45	3.07	84.92	3.26	1.75	1.51	84.92	3.26	1.75	1.51
Segment 15:	County Highway 141 to County Highway 139	1.00	71.03	2.73	0.87	1.85	60.22	2.31	0.74	1.57	46.21	1.77	0.95	0.85	46.21	1.77	0.93	0.84
Segment 16:	County Highway 139 to La Mesa Drive	1.00	79.29	3.04	0.97	2.07	87.56	3.36	1.99	1.37	54.71	2.10	1.11	1.00	54.58	2.09	1.10	0.99
Segment 17:	La Mesa Drive to Marion Road	0.97	58.75	2.25	0.71	1.53	60.34	2.32	1.18	1.13	45.18	1.74	0.75	0.98	45.00	1.73	0.74	0.98
Total	**All SD 38 Segments**	**14.67**	**857.26**	**32.88**	**10.49**	**22.31**	**802.96**	**30.82**	**13.38**	**17.43**	**642.62**	**24.64**	**11.50**	**13.18**	**608.23**	**23.33**	**10.28**	**13.03**

Source: Interactive Highway Safety Design Model (IHSDM) 2021 Release, v17.0.0, HR Green, 2023.

TABLE 12: SD 38 INTERSECTION CRASH FREQUENCY

Location		No Build Predicted Crashes (2025-2050)				Alternative 1 Predicted Crashes (2025-2050)				Alternative 2 Predicted Crashes (2025-2050)				Alternative 3 Predicted Crashes (2025-2050)			
		Total Crashes	Total Crashes/ Year	FI Crashes/ Year	PDO Crashes/ Year	Total Crashes	Total Crashes/ Year	FI Crashes/ Year	PDO Crashes/ Year	Total Crashes	Total Crashes/ Year	FI Crashes/ Year	PDO Crashes/ Year	Total Crashes	Total Crashes/ Year	FI Crashes/ Year	PDO Crashes/ Year
Intersection 1:	SD Highway 19 / 457th Avenue	21.11	0.81	0.33	0.47	41.06	1.57	0.68	0.89	41.06	1.57	0.68	0.89	41.06	1.57	0.68	0.89
Intersection 2:	459th Avenue	27.93	1.07	0.46	0.61	12.69	0.48	0.21	0.27	12.69	0.48	0.21	0.27	12.69	0.48	0.21	0.27
Intersection 3:	I-90 Speedway Entrance	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Intersection 4:	Western Avenue / 463rd Avenue	169.48	6.51	2.80	3.70	94.91	3.65	1.57	2.07	94.91	3.65	1.57	2.07	94.91	3.65	1.57	2.07
Intersection 5:	Main Avenue	132.77	5.10	2.20	2.90	132.77	5.10	2.20	2.90	132.77	5.10	2.20	2.90	132.77	5.10	2.20	2.90
Intersection 6:	Vandemark Avenue	74.90	2.88	1.24	1.63	74.90	2.88	1.24	1.63	74.90	2.88	1.24	1.63	74.90	2.88	1.24	1.63
Intersection 7:	2nd Street	166.63	6.40	2.76	3.64	67.18	2.58	1.11	1.47	67.18	2.58	1.11	1.47	67.18	2.58	1.11	1.47
Intersection 8:	West Central High School Entrance	73.62	2.83	1.17	1.65	73.62	2.83	1.17	1.65	73.62	2.83	1.17	1.65	73.62	2.83	1.17	1.65
Intersection 9:	Railroad Street / 464th Avenue	137.23	5.27	2.27	3.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Intersection 10:	Mickelson Road/260th Street	168.08	6.46	2.19	4.26	54.28	2.08	0.98	1.10	54.28	2.08	0.98	1.10	54.28	2.08	0.98	1.10
Intersection 11:	466th Avenue North	33.89	1.30	0.54	0.76	37.74	1.45	0.64	0.80	36.85	1.41	0.62	0.79	36.85	1.41	0.62	0.79
Intersection 12:	WB I-90 Exit 390	15.08	0.58	0.19	0.38	15.32	0.58	0.20	0.38	15.23	0.58	0.19	0.38	11.67	0.44	0.14	0.30
Intersection 13:	EB I-90 Exit 390	58.66	2.25	0.93	1.31	75.51	2.90	1.25	1.65	59.52	2.28	1.21	1.07	59.52	2.28	1.21	1.07
Intersection 14:	466th Avenue South	75.53	2.90	1.20	1.69	-	-	-	-	-	-	-	-	-	-	-	-
Intersection 15:	County Highway 141 / 468th Avenue	87.10	3.35	1.44	1.90	87.10	3.35	1.44	1.90	45.50	1.75	0.83	0.91	45.50	1.75	0.83	0.91
Intersection 16:	County Highway 139 / 469th Avenue	57.44	2.20	0.91	1.29	97.65	3.76	1.62	2.13	50.17	1.93	1.02	0.91	50.17	1.93	1.02	0.91
Intersection 17:	La Mesa Drive / 470th Avenue	61.03	2.34	1.01	1.33	46.79	1.80	1.01	0.78	46.79	1.80	1.01	0.78	46.79	1.80	1.01	0.78
Intersection 18:	Marion Road	55.22	2.12	0.69	1.42	49.96	1.92	0.63	1.29	49.96	1.92	0.63	1.29	49.96	1.92	0.63	1.29
Total	**All SD 38 Intersections**	**1415.70**	**54.37**	**22.33**	**31.94**	**961.48**	**36.92**	**15.95**	**20.91**	**855.43**	**32.83**	**14.67**	**18.10**	**851.87**	**32.69**	**14.62**	**18.02**

Source: Interactive Highway Safety Design Model (IHSDM) 2021 Release, v17.0.0, HR Green, 2023.

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Summary

The purpose of this technical memorandum is to document the future build concept traffic assessment at the eighteen study intersections and associated highway corridor segments along the SD Highway 38 corridor, from the SD Highway 19 intersection in Humboldt, South Dakota to the Marion Road intersection in Sioux Falls, South Dakota.

Using the Future year 2050 traffic forecasts, the traffic operations at study intersections and along the highway were evaluated for the three build corridor concepts.

- **Alternative 1** – two-lane highway from Humboldt to Hartford (as existing), three-lane roadway from Western Avenue to Railroad Street, five-lane roadway (center TWLTL) between Railroad Street to the I-90 Exit 390 interchange, two-lane highway from the I-90 interchange to 469th Ave/County Highway 139, and five-lane roadway (center TWLTL) from 460th Ave/County Highway 139 to Sioux Falls.
- **Alternative 2** – two-lane highway from Humboldt to Hartford (as existing), three-lane roadway from Western Avenue to Railroad Street, five-lane roadway (center TWLTL) between Railroad Street to the I-90 Exit 390 interchange, four-lane highway (raised median) from the I-90 interchange to Sioux Falls.
- **Alternative 3** - two-lane highway from Humboldt to Hartford (as existing), three-lane roadway from Western Avenue to Railroad Street, four-lane roadway (raised median) between Railroad Street and Sioux Falls.

Under the Opening Year 2029 conditions, the traffic operations analyses showed acceptable operations at all intersections within the study area, under all alternative scenarios, with intersections achieving LOS C or greater during both the AM and PM peak hours. The traffic operations analyses showed acceptable operations at all of the highway segments within the study area, under all alternative scenarios, with all segments achieving LOS B or greater during both the AM and PM peak hours. The desired LOS was realized for all intersections and highway segments during the AM and PM peak hours for all concepts

Under the Design Year 2050 conditions, the traffic operations analyses showed acceptable operations at all intersections within the study area, with intersections achieving LOS C or greater during both the AM and PM peak hours. To achieve LOS C goals, it was necessary to convert several intersections from two-way stop control to signalized operations. The traffic operations analyses showed acceptable operations at all of the highway segments within the study area, under all alternative scenarios, with all segments achieving LOS C or greater during both the AM and PM peak hours. The desired LOS was realized for all intersections and highway segments during the AM and PM peak hours for all concepts.

The predictive safety analysis of the SD Highway 38 study corridor revealed the potential for crash reductions in segments that contained a raised median with a reduction of 194.7 total crashes in segments with a raised median compared to without a raised median. The predictive safety analysis of the study intersections showed that there were noticeable changes in the predicted crash frequency at the intersections where the two-lane highway was maintained compared to the concepts with a five-lane cross section with a reduction of 89.9 total crashes with the five-lane cross section.

Recommendations

Based on the evaluations and conclusions documented for this corridor study, it is recommended to modify the existing SD 38 corridor as seen in Alternative 3. This alternative provides sufficient capacity to handle future traffic demand while increasing the overall safety of the corridor. Intersections along the study corridor should be monitored for traffic demand changes and plan for future capacity improvements or installation of traffic signal controls, if warranted.

Appendix A – HCS Output

HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2023
Agency	HR Green	Analysis Year	2050 Build
Jurisdiction	SD 38 Build Option 1	Time Analyzed	AM
Project Description	464th_MickelsonRd_2050_AM	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	55.0	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	638	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	370
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2100
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2100
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.18

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	6.7
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	362	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.66
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data			
Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	8.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	53.0	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors			
Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity			
Volume (V) veh/h	380	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	244
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2060
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2060
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 2 Speed and Density			
Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	2.0		

Direction 2 Bicycle LOS			
Flow Rate in Outside Lane (v_{OL}), veh/h	216	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	6.14
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2023
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build Option 1	Time Analyzed	PM
Project Description	464th_MickelsonRd_PM	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	55.0	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	441	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	266
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2100
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2100
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.13

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.8
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	251	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.56
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	D

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	8.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	53.0	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	730	Heavy Vehicle Adjustment Factor (f_{HV})	0.990
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	419
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2060
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2060
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.20

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	7.9
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	2.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	415	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.50
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	B

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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	2/27/2024
Agency	HRG	Analysis Year	2050
Jurisdiction	SDDOT	Time Analyzed	AM
Project Description	SD 38_466th_469th_EB Build Option 1	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1331
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	414	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57394	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29259	PF Power Coefficient (p)	0.75846
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1331	-	-	67.2

Vehicle Results

Average Speed, mi/h	67.2	Percent Followers, %	48.4
Segment Travel Time, minutes	0.23	Follower Density (FD), followers/mi/ln	3.0
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	414	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1877

Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	414	Opposing Demand Flow Rate, veh/h	295
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36033	Speed Power Coefficient (p)	0.51615
PF Slope Coefficient (m)	-1.23039	PF Power Coefficient (p)	0.81159
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1877	-	-	67.6

Vehicle Results

Average Speed, mi/h	67.6	Percent Followers, %	45.2
Segment Travel Time, minutes	0.32	Follower Density (FD), followers/mi/ln	2.8
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	414	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 3

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1872
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	414	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58354	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26676	PF Power Coefficient (p)	0.76864
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1872	-	-	67.2

Vehicle Results

Average Speed, mi/h	67.2	Percent Followers, %	47.4
Segment Travel Time, minutes	0.32	Follower Density (FD), followers/mi/ln	2.9
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	414	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 4

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3603
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	414	Opposing Demand Flow Rate, veh/h	295
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.38398	Speed Power Coefficient (p)	0.51615
PF Slope Coefficient (m)	-1.18638	PF Power Coefficient (p)	0.82825
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3603	-	-	67.6

Vehicle Results

Average Speed, mi/h	67.6	Percent Followers, %	43.5
Segment Travel Time, minutes	0.61	Follower Density (FD), followers/mi/ln	2.7
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	414	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.80	Bicycle Effective Speed Factor	5.07

Bicycle LOS	D		

Segment 5

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1053
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	414	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29321	PF Power Coefficient (p)	0.75821
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1053	-	-	67.2

Vehicle Results

Average Speed, mi/h	67.2	Percent Followers, %	48.4
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	3.0
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	414	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 6

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1120
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	414	Opposing Demand Flow Rate, veh/h	244
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.24

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33428	Speed Power Coefficient (p)	0.52768
PF Slope Coefficient (m)	-1.24745	PF Power Coefficient (p)	0.80382
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1120	-	-	67.6

Vehicle Results

Average Speed, mi/h	67.6	Percent Followers, %	45.9
Segment Travel Time, minutes	0.19	Follower Density (FD), followers/mi/ln	2.8
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	414	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1272
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	466	Opposing Demand Flow Rate, veh/h	318
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.27

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35715	Speed Power Coefficient (p)	0.51152
PF Slope Coefficient (m)	-1.25973	PF Power Coefficient (p)	0.79928
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1272	-	-	67.4

Vehicle Results

Average Speed, mi/h	67.4	Percent Followers, %	49.5
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	3.4

Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	466	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 8

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	625
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	466	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.27

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29323	PF Power Coefficient (p)	0.75819
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	625	-	-	67.0

Vehicle Results

Average Speed, mi/h	67.0	Percent Followers, %	51.6
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	3.6
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	466	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 9

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1995
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	466	Opposing Demand Flow Rate, veh/h	318
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.27

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36896	Speed Power Coefficient (p)	0.51152
PF Slope Coefficient (m)	-1.22932	PF Power Coefficient (p)	0.81204
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1995	-	-	67.4

Vehicle Results

Average Speed, mi/h	67.4	Percent Followers, %	48.4
Segment Travel Time, minutes	0.34	Follower Density (FD), followers/mi/ln	3.3
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	466	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 10

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1399
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	466	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.27

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57524	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28884	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1399	-	-	67.0

Vehicle Results

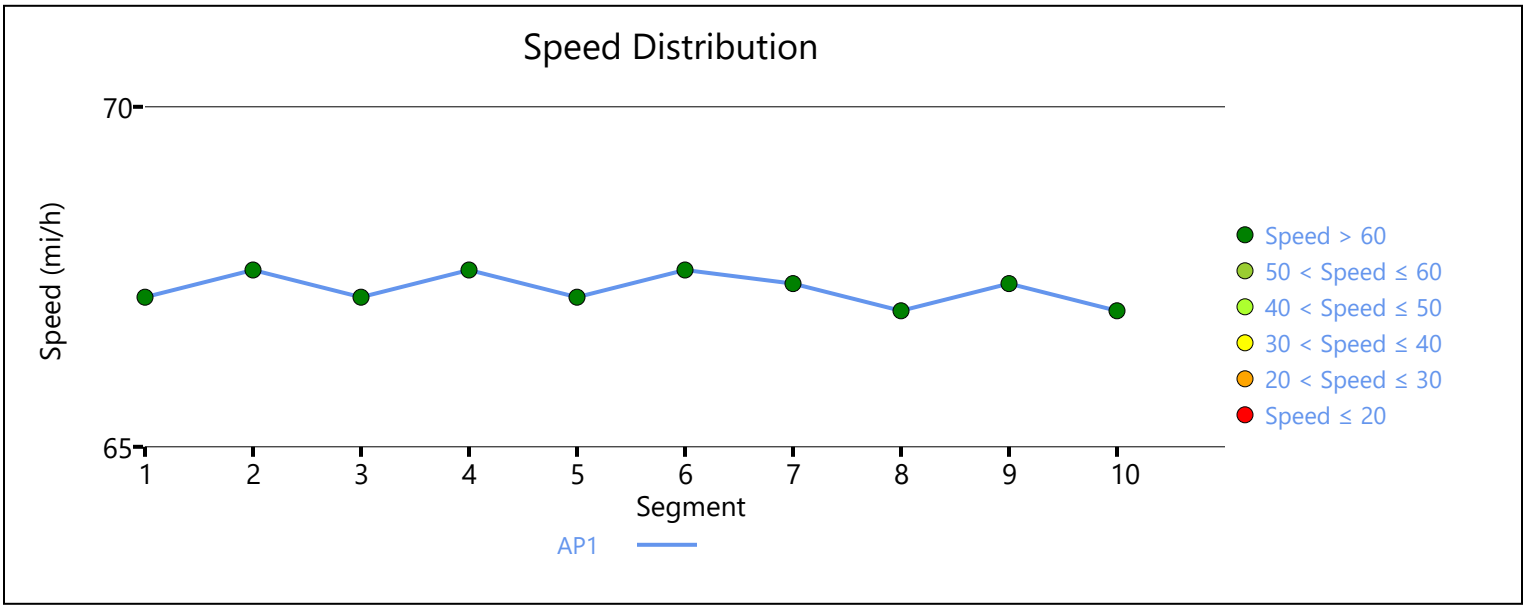
Average Speed, mi/h	67.0	Percent Followers, %	51.4
Segment Travel Time, minutes	0.24	Follower Density (FD), followers/mi/ln	3.6
Vehicle LOS	B		

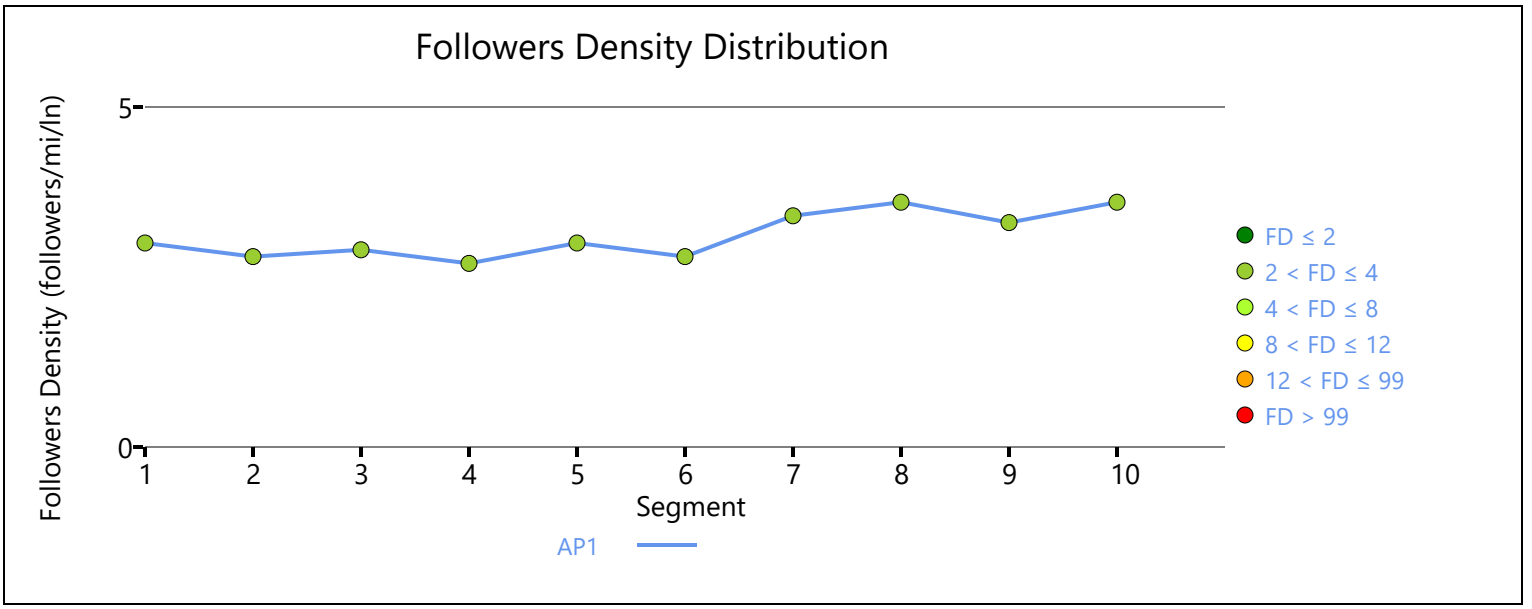
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	466	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	290	0.16	3.0	B





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	2/27/2024
Agency	HRG	Analysis Year	2050
Jurisdiction	SDDOT	Time Analyzed	PM
Project Description	466th_469th_EB Build Option 1	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1331
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	355	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.21

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57394	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29259	PF Power Coefficient (p)	0.75846
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1331	-	-	67.4

Vehicle Results

Average Speed, mi/h	67.4	Percent Followers, %	44.5
Segment Travel Time, minutes	0.22	Follower Density (FD), followers/mi/ln	2.3
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	355	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1877

Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	355	Opposing Demand Flow Rate, veh/h	477
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.21

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.40861	Speed Power Coefficient (p)	0.48517
PF Slope Coefficient (m)	-1.25153	PF Power Coefficient (p)	0.80198
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1877	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	42.0
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	2.2
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	355	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 3

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1872
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	355	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.21

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58354	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26676	PF Power Coefficient (p)	0.76864
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1872	-	-	67.4

Vehicle Results

Average Speed, mi/h	67.4	Percent Followers, %	43.5
Segment Travel Time, minutes	0.32	Follower Density (FD), followers/mi/ln	2.3
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	355	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 4

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3603
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	355	Opposing Demand Flow Rate, veh/h	477
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.21

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.43226	Speed Power Coefficient (p)	0.48517
PF Slope Coefficient (m)	-1.20666	PF Power Coefficient (p)	0.81813
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3603	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	40.3
Segment Travel Time, minutes	0.60	Follower Density (FD), followers/mi/ln	2.1
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	355	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.72	Bicycle Effective Speed Factor	5.07

Bicycle LOS	D		

Segment 5

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1053
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	355	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.21

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29321	PF Power Coefficient (p)	0.75821
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1053	-	-	67.4

Vehicle Results

Average Speed, mi/h	67.4	Percent Followers, %	44.5
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	2.3
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	355	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 6

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1120
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	355	Opposing Demand Flow Rate, veh/h	403
Peak Hour Factor	0.88	Total Trucks, %	5.26
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.21

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.38045	Speed Power Coefficient (p)	0.49627
PF Slope Coefficient (m)	-1.27058	PF Power Coefficient (p)	0.79479
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1120	-	-	67.8

Vehicle Results

Average Speed, mi/h	67.8	Percent Followers, %	42.7
Segment Travel Time, minutes	0.19	Follower Density (FD), followers/mi/ln	2.2
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	355	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1272
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	420	Opposing Demand Flow Rate, veh/h	557
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.25

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.41686	Speed Power Coefficient (p)	0.47488
PF Slope Coefficient (m)	-1.28420	PF Power Coefficient (p)	0.78783
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1272	-	-	67.4

Vehicle Results

Average Speed, mi/h	67.4	Percent Followers, %	47.7
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	3.0

Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	420	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.75	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 8

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	625
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	420	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.25

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29323	PF Power Coefficient (p)	0.75819
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	625	-	-	67.2

Vehicle Results

Average Speed, mi/h	67.2	Percent Followers, %	48.9
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	3.1
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	420	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.75	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 9

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1995
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	420	Opposing Demand Flow Rate, veh/h	557
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.25

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.42866	Speed Power Coefficient (p)	0.47488
PF Slope Coefficient (m)	-1.25311	PF Power Coefficient (p)	0.80020
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1995	-	-	67.4

Vehicle Results

Average Speed, mi/h	67.4	Percent Followers, %	46.6
Segment Travel Time, minutes	0.34	Follower Density (FD), followers/mi/ln	2.9
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	420	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.75	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 10

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1399
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	420	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.09
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.25

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57524	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.28884	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1399	-	-	67.2

Vehicle Results

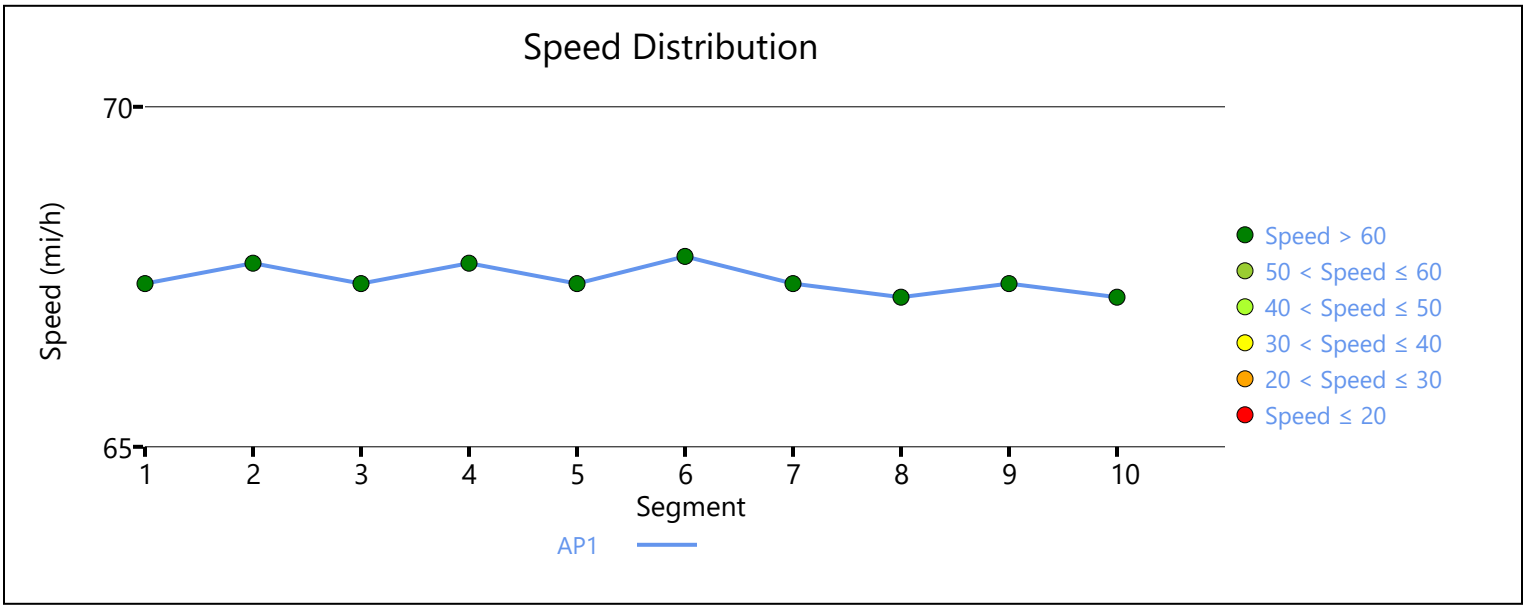
Average Speed, mi/h	67.2	Percent Followers, %	48.7
Segment Travel Time, minutes	0.24	Follower Density (FD), followers/mi/ln	3.0
Vehicle LOS	B		

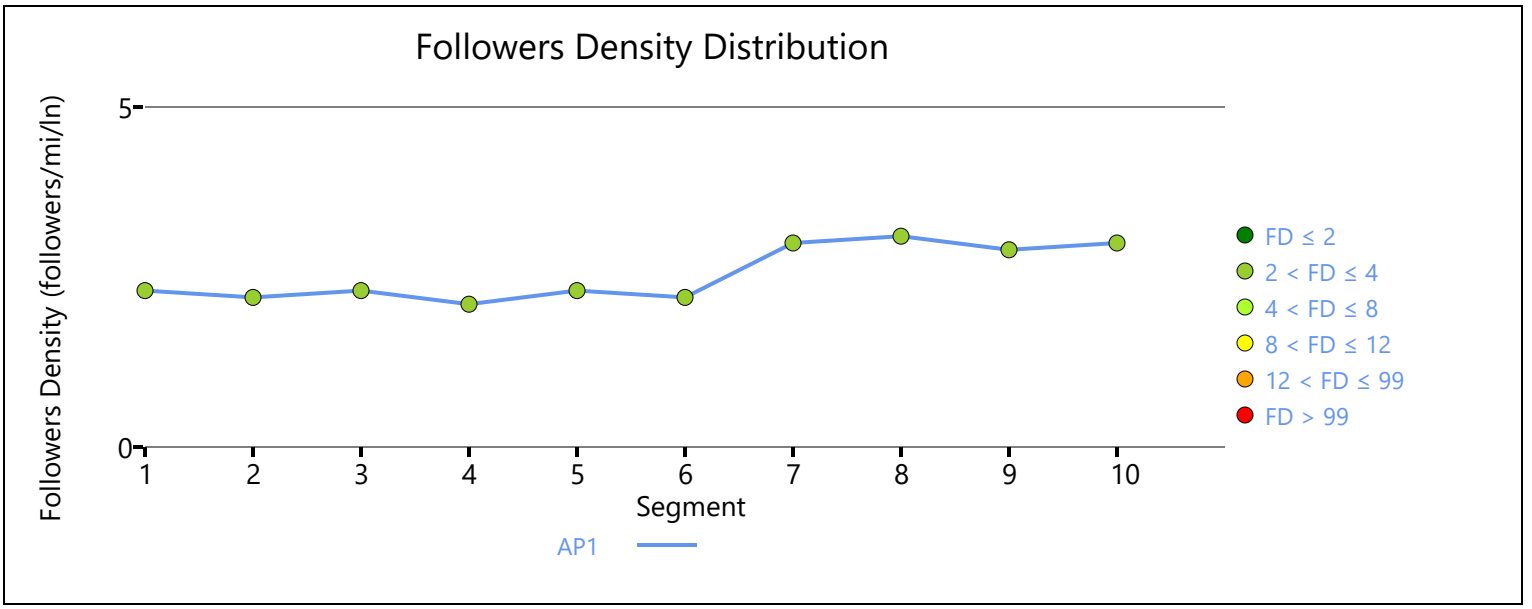
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	420	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.75	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	253	0.13	2.5	B





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	11/2/2023
Agency	HRG	Analysis Year	2050
Jurisdiction	SDDOT	Time Analyzed	AM
Project Description	466th_469th_AM_WB_Build_Option1	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	718
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	318	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.19

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29182	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	718	-	-	67.6

Vehicle Results

Average Speed, mi/h	67.6	Percent Followers, %	41.8
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	2.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	318	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.01	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1738

Measured FFS	Measured	Free-Flow Speed, mi/h	70.0
Demand and Capacity			
Directional Demand Flow Rate, veh/h	318	Opposing Demand Flow Rate, veh/h	466
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.19
Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.40359	Speed Power Coefficient (p)	0.48677
PF Slope Coefficient (m)	-1.25494	PF Power Coefficient (p)	0.80196
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1738	-	-	67.9

Vehicle Results			
Average Speed, mi/h	67.9	Percent Followers, %	39.4
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	1.8
Vehicle LOS	A		
Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	318	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.01	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		
Segment 3			
Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	579
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0
Demand and Capacity			
Directional Demand Flow Rate, veh/h	318	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.19
Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29182	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	579	-	-	67.6

Vehicle Results

Average Speed, mi/h	67.6	Percent Followers, %	41.8
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	2.0
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	318	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.01	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 4

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2262
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	318	Opposing Demand Flow Rate, veh/h	466
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.19

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.41190	Speed Power Coefficient (p)	0.48677
PF Slope Coefficient (m)	-1.23534	PF Power Coefficient (p)	0.80987
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.8
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2262	-	-	67.9

Vehicle Results

Average Speed, mi/h	67.9	Percent Followers, %	38.7
Segment Travel Time, minutes	0.38	Follower Density (FD), followers/mi/ln	1.8
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	318	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.85	Bicycle Effective Speed Factor	5.07

Bicycle LOS	F		

Segment 5

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	980
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	295	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	980	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	40.0
Segment Travel Time, minutes	0.16	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	295	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.81	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 6

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3667
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	295	Opposing Demand Flow Rate, veh/h	414
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.41738	Speed Power Coefficient (p)	0.49463
PF Slope Coefficient (m)	-1.19837	PF Power Coefficient (p)	0.82363
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3667	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	35.5
Segment Travel Time, minutes	0.61	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	295	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.81	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1846
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	295	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58311	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26629	PF Power Coefficient (p)	0.77017
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1846	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.1
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	1.7

Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	295	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.81	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2174
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	295	Opposing Demand Flow Rate, veh/h	414
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39765	Speed Power Coefficient (p)	0.49463
PF Slope Coefficient (m)	-1.23320	PF Power Coefficient (p)	0.81133
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2174	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	36.8
Segment Travel Time, minutes	0.36	Follower Density (FD), followers/mi/ln	1.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	295	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.81	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1277
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	295	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1277	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	40.0
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	295	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.81	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 10

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	898
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	295	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	779	-	-	67.7

Vehicle Results

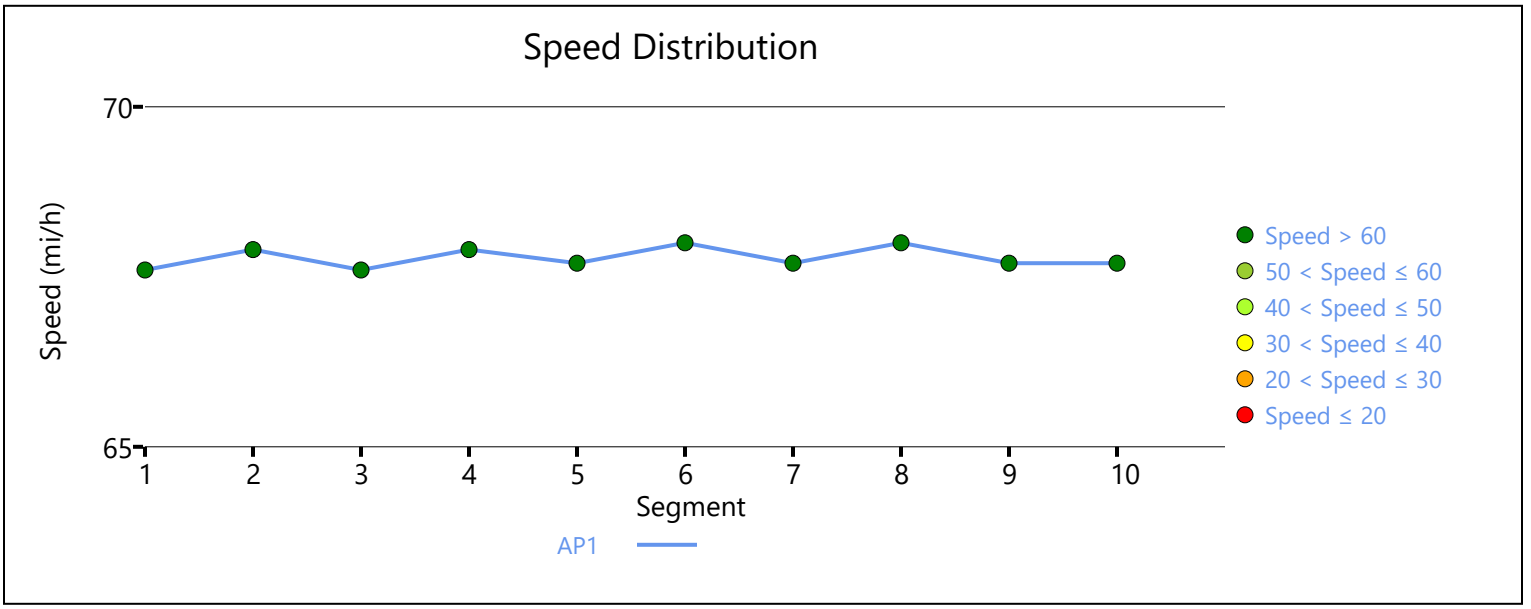
Average Speed, mi/h	67.7	Percent Followers, %	40.0
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

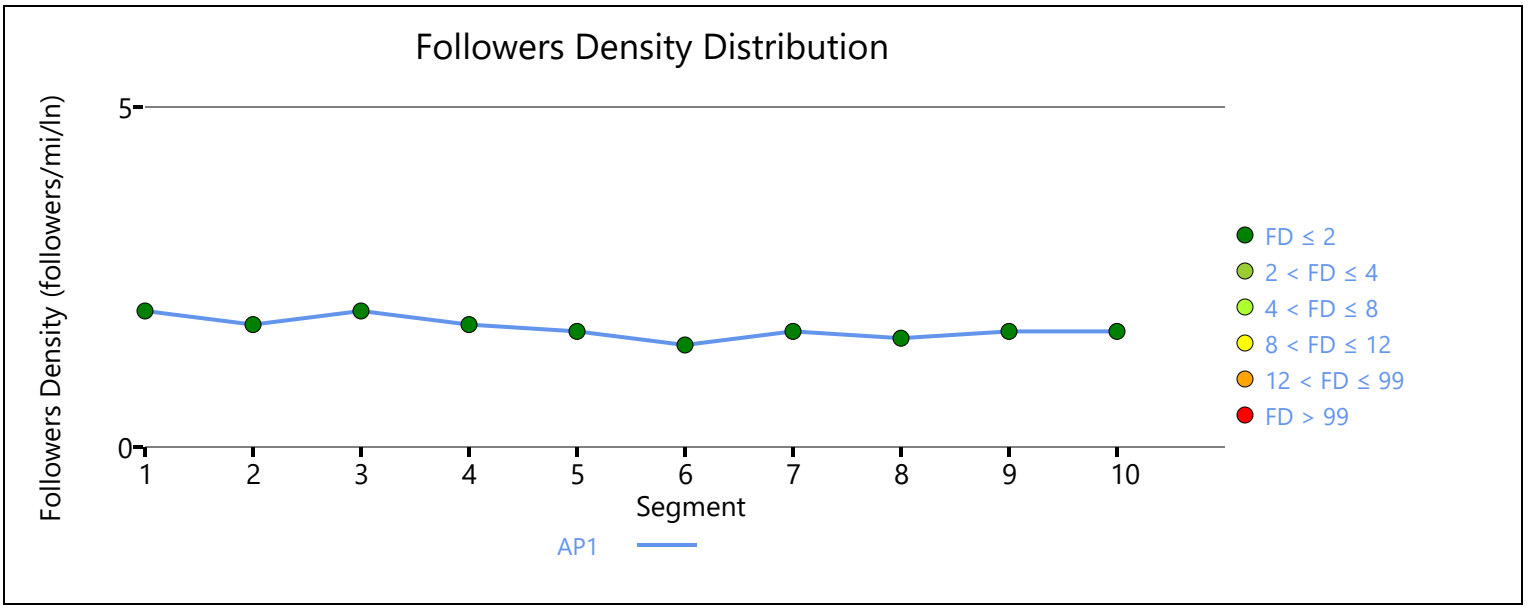
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	295	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.81	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	204	0.09	1.7	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	2/27/2024
Agency	HRG	Analysis Year	2050
Jurisdiction	SDDOT	Time Analyzed	PM
Project Description	466th_469th_PM_WB_Build_Option1	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	718
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	557	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.33

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29182	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	718	-	-	66.7

Vehicle Results

Average Speed, mi/h	66.7	Percent Followers, %	56.3
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	4.7
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	557	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.30	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1738

Measured FFS	Measured	Free-Flow Speed, mi/h	70.0
Demand and Capacity			
Directional Demand Flow Rate, veh/h	557	Opposing Demand Flow Rate, veh/h	420
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.33
Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39239	Speed Power Coefficient (p)	0.49356
PF Slope Coefficient (m)	-1.25055	PF Power Coefficient (p)	0.80414
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1738	-	-	67.0

Vehicle Results			
Average Speed, mi/h	67.0	Percent Followers, %	54.2
Segment Travel Time, minutes	0.29	Follower Density (FD), followers/mi/ln	4.5
Vehicle LOS	C		
Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	557	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.30	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		
Segment 3			
Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	579
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0
Demand and Capacity			
Directional Demand Flow Rate, veh/h	557	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	17.04
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.33
Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29182	PF Power Coefficient (p)	0.75993
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	579	-	-	66.7

Vehicle Results

Average Speed, mi/h	66.7	Percent Followers, %	56.3
Segment Travel Time, minutes	0.10	Follower Density (FD), followers/mi/ln	4.7
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	557	Bicycle Effective Width, ft	24
Bicycle LOS Score	9.30	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 4

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2262
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	557	Opposing Demand Flow Rate, veh/h	420
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.33

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.40070	Speed Power Coefficient (p)	0.49356
PF Slope Coefficient (m)	-1.23103	PF Power Coefficient (p)	0.81211
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	4.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2262	-	-	67.0

Vehicle Results

Average Speed, mi/h	67.0	Percent Followers, %	53.5
Segment Travel Time, minutes	0.38	Follower Density (FD), followers/mi/ln	4.4
Vehicle LOS	C		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	557	Bicycle Effective Width, ft	24
Bicycle LOS Score	10.13	Bicycle Effective Speed Factor	5.07

Bicycle LOS	F		

Segment 5

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	980
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	477	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.28

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	980	-	-	67.0

Vehicle Results

Average Speed, mi/h	67.0	Percent Followers, %	52.1
Segment Travel Time, minutes	0.17	Follower Density (FD), followers/mi/ln	3.7
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	477	Bicycle Effective Width, ft	24
Bicycle LOS Score	10.05	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 6

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3667
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	477	Opposing Demand Flow Rate, veh/h	355
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.28

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.40174	Speed Power Coefficient (p)	0.50464
PF Slope Coefficient (m)	-1.19184	PF Power Coefficient (p)	0.82692
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3667	-	-	67.3

Vehicle Results

Average Speed, mi/h	67.3	Percent Followers, %	47.6
Segment Travel Time, minutes	0.62	Follower Density (FD), followers/mi/ln	3.4
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	477	Bicycle Effective Width, ft	24
Bicycle LOS Score	10.05	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1846
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	477	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.28

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.58311	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.26629	PF Power Coefficient (p)	0.77017
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1846	-	-	66.9

Vehicle Results

Average Speed, mi/h	66.9	Percent Followers, %	51.1
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	3.6

Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	477	Bicycle Effective Width, ft	24
Bicycle LOS Score	10.05	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2174
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	477	Opposing Demand Flow Rate, veh/h	355
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.28

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.38201	Speed Power Coefficient (p)	0.50464
PF Slope Coefficient (m)	-1.22645	PF Power Coefficient (p)	0.81448
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2174	-	-	67.3

Vehicle Results

Average Speed, mi/h	67.3	Percent Followers, %	48.9
Segment Travel Time, minutes	0.37	Follower Density (FD), followers/mi/ln	3.5
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	477	Bicycle Effective Width, ft	24
Bicycle LOS Score	10.05	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1277
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	477	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.28

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1277	-	-	67.0

Vehicle Results

Average Speed, mi/h	67.0	Percent Followers, %	52.1
Segment Travel Time, minutes	0.22	Follower Density (FD), followers/mi/ln	3.7
Vehicle LOS	B		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	477	Bicycle Effective Width, ft	24
Bicycle LOS Score	10.05	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Segment 10

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	898
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	477	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	18.44
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.28

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29166	PF Power Coefficient (p)	0.76014
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	3.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	779	-	-	67.0

Vehicle Results

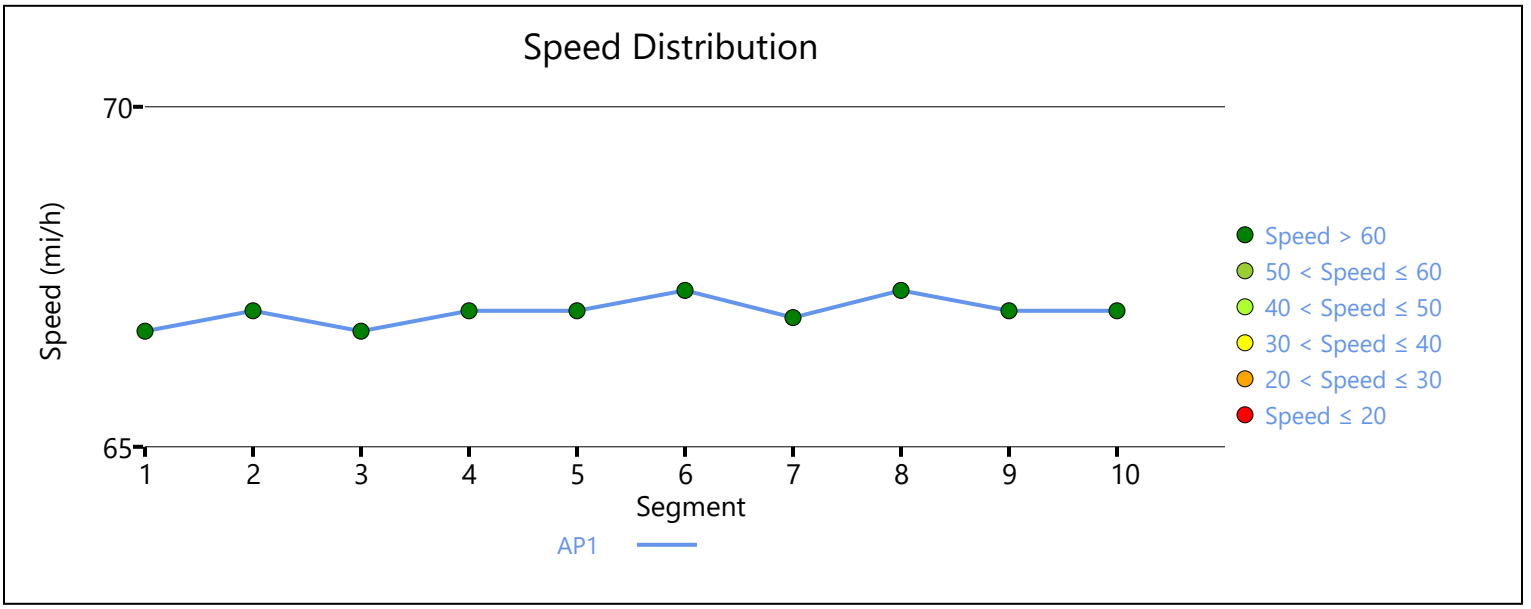
Average Speed, mi/h	67.0	Percent Followers, %	52.1
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	3.7
Vehicle LOS	B		

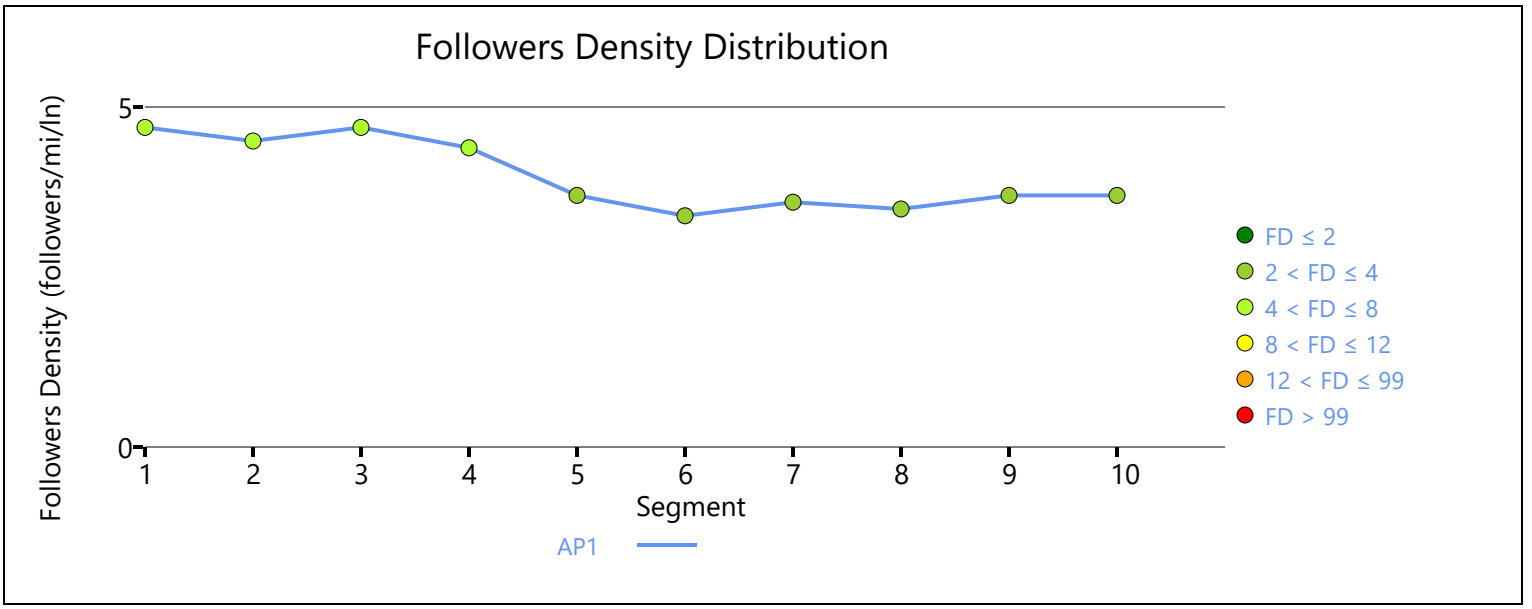
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	477	Bicycle Effective Width, ft	24
Bicycle LOS Score	10.05	Bicycle Effective Speed Factor	5.07
Bicycle LOS	F		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	339	0.21	3.9	B





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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	3/7/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build Option 1	Time Analyzed	AM
Project Description	466th St to I90 WB Ramps	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	769	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	446
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.19

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	6.4
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	437	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.88
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	436	Heavy Vehicle Adjustment Factor (f_{HV})	0.833
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	298
Total Trucks, %	20.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.13

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.3
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	248	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	10.71
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	3/7/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build Option 1	Time Analyzed	PM
Project Description	466th St to I90 WB Ramps	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	450	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	279
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	256	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	4.92
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	E

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	910	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	532
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.23

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	7.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	517	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.23
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build Option 1	Time Analyzed	AM
Project Description	469th to LaMesa	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	2.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.5	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	610	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	360
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.16

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.5
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	5.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.5		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	347	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.32
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.8	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	240	Heavy Vehicle Adjustment Factor (f_{HV})	0.820
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	166
Total Trucks, %	22.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.07

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.8
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	2.4
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	136	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	11.74
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build Option1	Time Analyzed	PM
Project Description	469th to LaMesa	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	2.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.5	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	366	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	227
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.10

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.5
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.3
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.5		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	208	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	4.82
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	E

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.8	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	666	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	390
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.17

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.8
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	5.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	378	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.07
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	3/7/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build Option 1	Time Analyzed	AM
Project Description	I90 WB Ramps to I90 EB Ramps	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	745	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	436
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.19

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	6.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	423	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.13
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	273	Heavy Vehicle Adjustment Factor (f_{HV})	0.877
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	177
Total Trucks, %	14.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.08

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	2.5
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	155	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	6.98
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	3/7/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build Option 1	Time Analyzed	PM
Project Description	I90 WB Ramps to I90 EB Ramps	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	451	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	280
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	256	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	4.92
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	E

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	455	Heavy Vehicle Adjustment Factor (f_{HV})	0.877
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	295
Total Trucks, %	14.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.13

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	259	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	7.24
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	3/7/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build Option 1	Time Analyzed	AM
Project Description	Mickelson Rd to 466th St	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.5
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.6	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	725	Heavy Vehicle Adjustment Factor (f_{HV})	0.990
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	416
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.18

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	6.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.4		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	412	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.61
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	2.2
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.5	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	425	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	273
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.4
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.9
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.6		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	241	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	6.70
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	3/7/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build Option 1	Time Analyzed	PM
Project Description	Mickelson Rd to 466th St	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.5
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.6	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	445	Heavy Vehicle Adjustment Factor (f_{HV})	0.901
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	280
Total Trucks, %	11.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.4		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	253	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	5.78
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	2.2
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.5	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	913	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	530
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.23

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.4
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	7.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.6		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	519	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.97
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/2/2024
Agency	HRG	Analysis Year	2050 Build Option 1
Jurisdiction	SDDOT	Time Analyzed	AM Peak
Project Description	West of Hartford SD 38 EB	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1069
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	169
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30713	Speed Power Coefficient (p)	0.54838
PF Slope Coefficient (m)	-1.23090	PF Power Coefficient (p)	0.80942
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1069	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	32.4
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	664
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	664	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	35.8
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1871
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	169
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.31694	Speed Power Coefficient (p)	0.54838
PF Slope Coefficient (m)	-1.20586	PF Power Coefficient (p)	0.82063
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1871	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	31.5
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	925
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	925	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	35.8
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4476
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	169
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35043	Speed Power Coefficient (p)	0.54838
PF Slope Coefficient (m)	-1.15155	PF Power Coefficient (p)	0.84082
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4476	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	29.6
Segment Travel Time, minutes	0.74	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	896
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	896	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	35.8
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	743
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	169
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30713	Speed Power Coefficient (p)	0.54838
PF Slope Coefficient (m)	-1.23090	PF Power Coefficient (p)	0.80942
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	743	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	32.4
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2717
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	245	Opposing Demand Flow Rate, veh/h	165
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32768	Speed Power Coefficient (p)	0.54983
PF Slope Coefficient (m)	-1.17918	PF Power Coefficient (p)	0.83165
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2717	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	30.7
Segment Travel Time, minutes	0.45	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	245	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.93	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1013
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	245	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29345	PF Power Coefficient (p)	0.75792
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1013	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	36.0
Segment Travel Time, minutes	0.17	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	245	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.93	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4569
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	245	Opposing Demand Flow Rate, veh/h	165
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34958	Speed Power Coefficient (p)	0.54983
PF Slope Coefficient (m)	-1.14981	PF Power Coefficient (p)	0.84100
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	4569	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	29.7
Segment Travel Time, minutes	0.76	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	245	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.93	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5676
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	244	Opposing Demand Flow Rate, veh/h	165
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36055	Speed Power Coefficient (p)	0.54983
PF Slope Coefficient (m)	-1.14222	PF Power Coefficient (p)	0.84066
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5676	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	29.5
Segment Travel Time, minutes	0.94	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	244	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 12

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	657
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	244	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29350	PF Power Coefficient (p)	0.75785
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	657	-	-	68.0

Vehicle Results			
Average Speed, mi/h	68.0	Percent Followers, %	35.9
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	244	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 13

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	6009
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	244	Opposing Demand Flow Rate, veh/h	165
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36364	Speed Power Coefficient (p)	0.54983
PF Slope Coefficient (m)	-1.14089	PF Power Coefficient (p)	0.83997

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6009	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	29.5
Segment Travel Time, minutes	1.00	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	244	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	891
Measured FFS	Measured	Free-Flow Speed, mi/h	50.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	244	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	50.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.47375	PF Power Coefficient (p)	0.71164
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	891	-	-	48.0

Vehicle Results

Average Speed, mi/h	48.0	Percent Followers, %	41.8
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	2.1
Vehicle LOS	B		

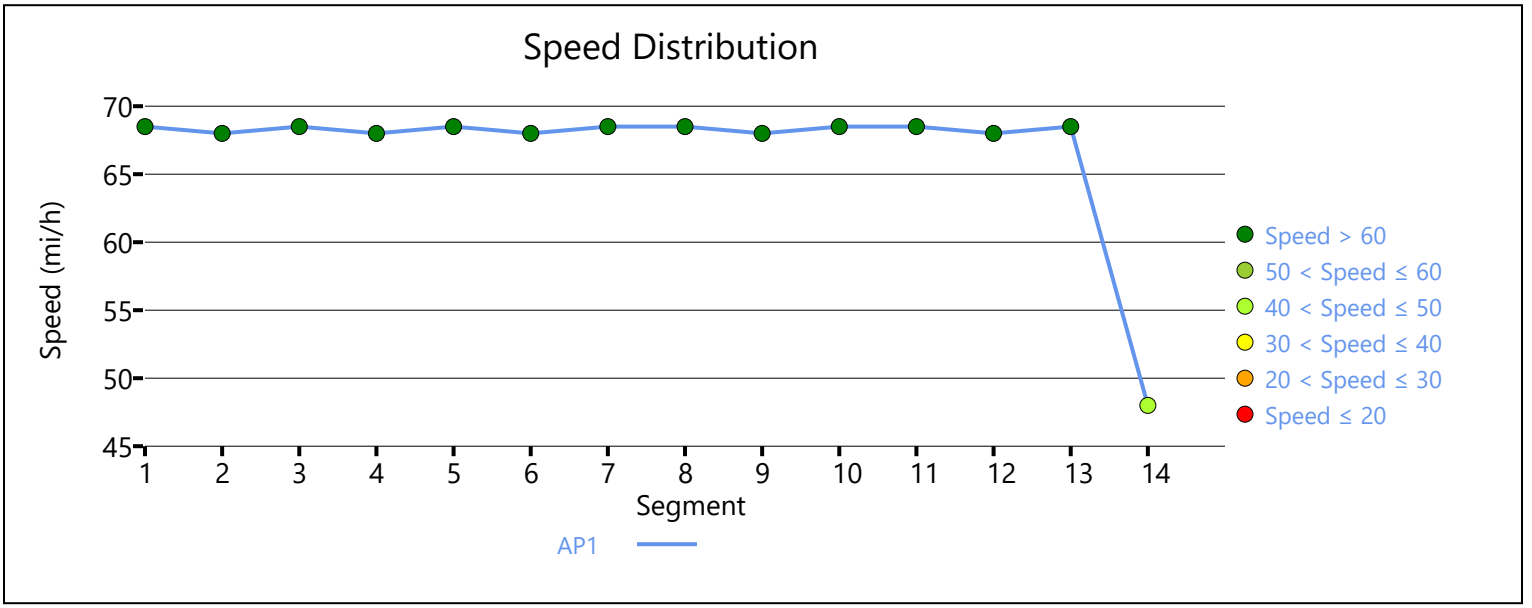
Bicycle Results

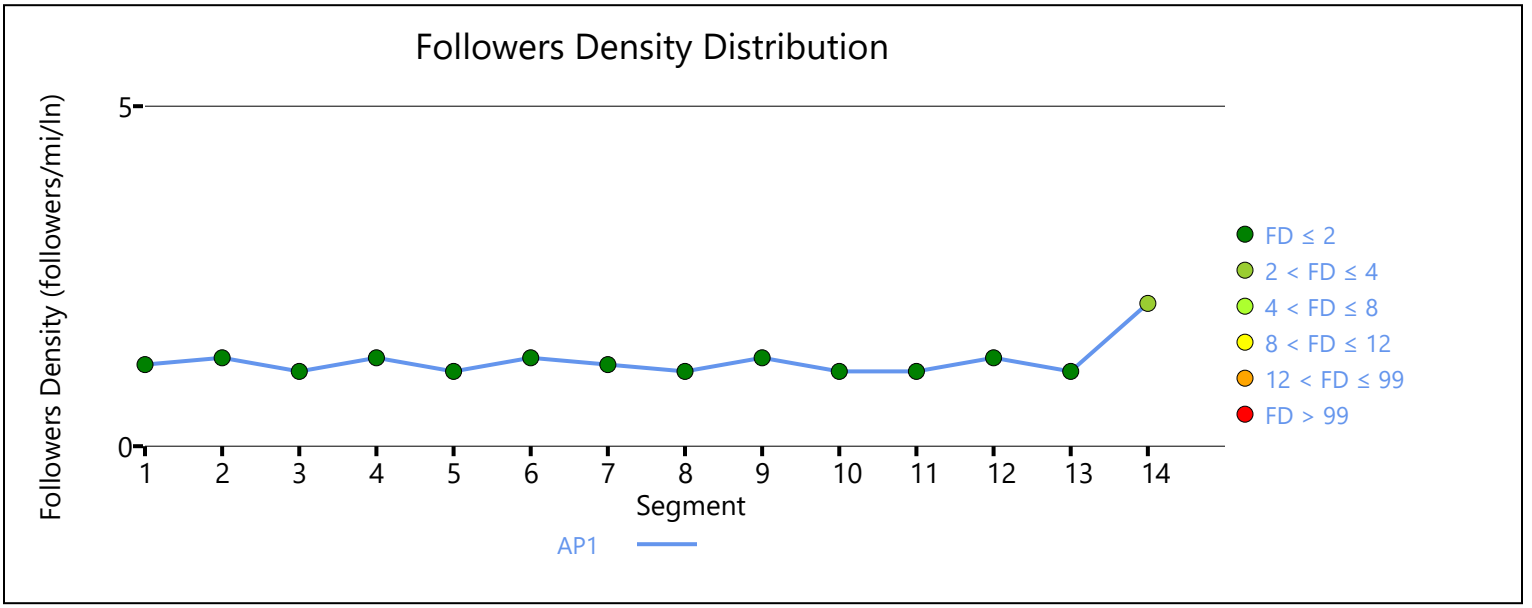
Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	244	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.59	Bicycle Effective Speed Factor	4.42
Bicycle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	327	0.11	1.1	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/2/2024
Agency	HRG	Analysis Year	2050 Build Option 1
Jurisdiction	SDDOT	Time Analyzed	PM Peak
Project Description	West of Hartford SD 38 EB	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1069
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	286
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34767	Speed Power Coefficient (p)	0.51808
PF Slope Coefficient (m)	-1.25475	PF Power Coefficient (p)	0.80124
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1069	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	24.8
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	664
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	664	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.2
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1871
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	286
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35747	Speed Power Coefficient (p)	0.51808
PF Slope Coefficient (m)	-1.22915	PF Power Coefficient (p)	0.81213
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1871	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.9
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	925
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	925	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.2
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4476
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	286
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39096	Speed Power Coefficient (p)	0.51808
PF Slope Coefficient (m)	-1.17364	PF Power Coefficient (p)	0.83159
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4476	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	22.2
Segment Travel Time, minutes	0.74	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	896
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	896	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.2
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	743
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	286
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34767	Speed Power Coefficient (p)	0.51808
PF Slope Coefficient (m)	-1.25475	PF Power Coefficient (p)	0.80124
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	743	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	24.8
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2717
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	289
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.37072	Speed Power Coefficient (p)	0.51760
PF Slope Coefficient (m)	-1.20338	PF Power Coefficient (p)	0.82225
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2717	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	23.8
Segment Travel Time, minutes	0.45	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.40	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1013
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29345	PF Power Coefficient (p)	0.75792
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1013	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.0
Segment Travel Time, minutes	0.17	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.40	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4569
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	289
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39263	Speed Power Coefficient (p)	0.51760
PF Slope Coefficient (m)	-1.17332	PF Power Coefficient (p)	0.83118
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	4569	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	22.9
Segment Travel Time, minutes	0.75	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.40	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5676
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	280
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.40080	Speed Power Coefficient (p)	0.51956
PF Slope Coefficient (m)	-1.16417	PF Power Coefficient (p)	0.83135
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5676	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	22.8
Segment Travel Time, minutes	0.94	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.28	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 12

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	657
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29350	PF Power Coefficient (p)	0.75785
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	657	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.0
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.28	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 13

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	6009
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	280
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.40389	Speed Power Coefficient (p)	0.51956
PF Slope Coefficient (m)	-1.16281	PF Power Coefficient (p)	0.83065

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6009	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	22.8
Segment Travel Time, minutes	0.99	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.28	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	891
Measured FFS	Measured	Free-Flow Speed, mi/h	50.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	50.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.47375	PF Power Coefficient (p)	0.71164
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	891	-	-	48.5

Vehicle Results

Average Speed, mi/h	48.5	Percent Followers, %	33.4
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

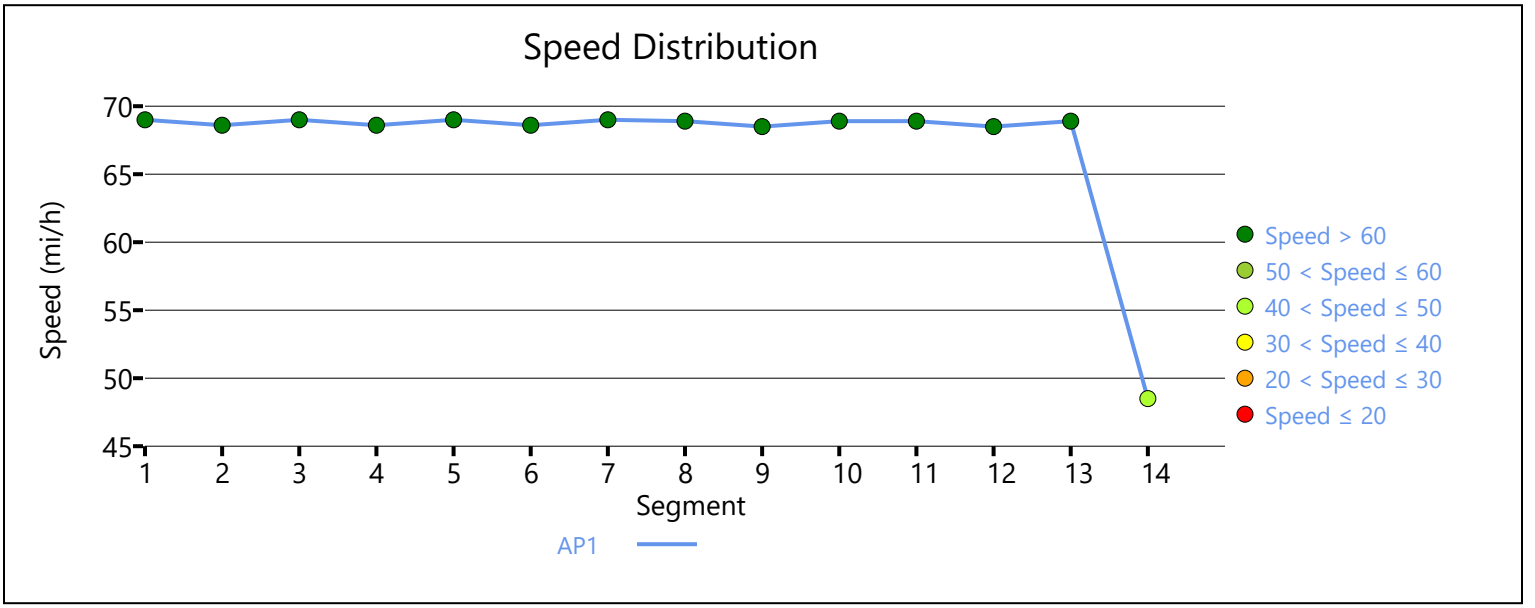
Bicycle Results

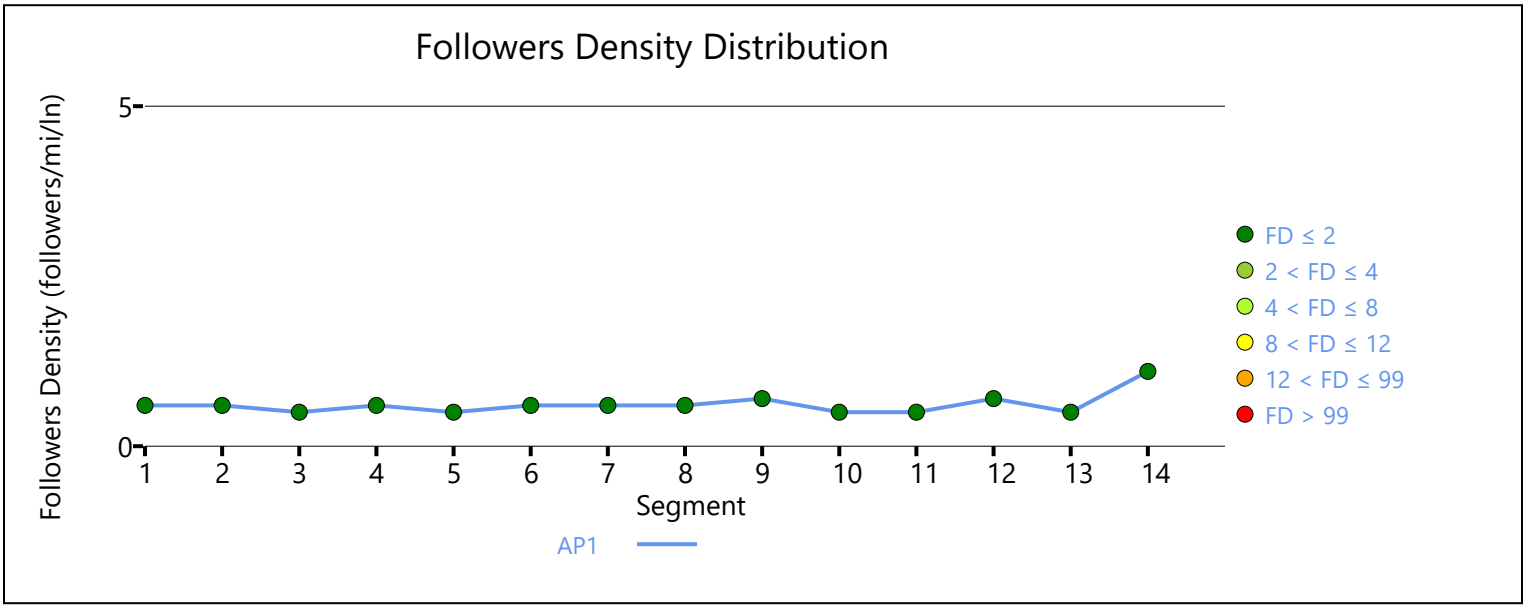
Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.06	Bicycle Effective Speed Factor	4.42
Bicycle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	216	0.05	0.6	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/2/2024
Agency	HRG	Analysis Year	2050 Build Option 1
Jurisdiction	SDDOT	Time Analyzed	AM Peak
Project Description	WB 38 West of Hartford	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	10549
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	244
Peak Hour Factor	0.88	Total Trucks, %	12.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.42827	Speed Power Coefficient (p)	0.52768
PF Slope Coefficient (m)	-1.16689	PF Power Coefficient (p)	0.80729
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	10549	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.8
Segment Travel Time, minutes	1.74	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	4.94	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2793
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	244
Peak Hour Factor	0.88	Total Trucks, %	12.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35767	Speed Power Coefficient (p)	0.52768
PF Slope Coefficient (m)	-1.19319	PF Power Coefficient (p)	0.82737
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2793	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.5
Segment Travel Time, minutes	0.46	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	4.94	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3825
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	245
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.37079	Speed Power Coefficient (p)	0.52741
PF Slope Coefficient (m)	-1.17529	PF Power Coefficient (p)	0.83222
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3825	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.1
Segment Travel Time, minutes	0.63	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	791
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29355	PF Power Coefficient (p)	0.75779
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	791	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.1
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3414
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	245
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36595	Speed Power Coefficient (p)	0.52741
PF Slope Coefficient (m)	-1.18179	PF Power Coefficient (p)	0.83026
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3414	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.2
Segment Travel Time, minutes	0.56	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	286
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29355	PF Power Coefficient (p)	0.75779
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	286	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.1
Segment Travel Time, minutes	0.05	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	463
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29353	PF Power Coefficient (p)	0.75782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	463	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.6
Segment Travel Time, minutes	0.08	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4822
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	243
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.38079	Speed Power Coefficient (p)	0.52796
PF Slope Coefficient (m)	-1.16377	PF Power Coefficient (p)	0.83451
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4822	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	23.2
Segment Travel Time, minutes	0.79	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	861
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29353	PF Power Coefficient (p)	0.75782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	861	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.6
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1556
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	243
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33831	Speed Power Coefficient (p)	0.52796
PF Slope Coefficient (m)	-1.23554	PF Power Coefficient (p)	0.80871
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1556	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	25.5
Segment Travel Time, minutes	0.26	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	799
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29353	PF Power Coefficient (p)	0.75782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	799	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.6
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 12

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	857
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	243
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33390	Speed Power Coefficient (p)	0.52796
PF Slope Coefficient (m)	-1.24754	PF Power Coefficient (p)	0.80350
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	857	-	-	68.9

Vehicle Results			
Average Speed, mi/h	68.9	Percent Followers, %	25.9
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 13

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1288
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39677	PF Power Coefficient (p)	0.73640

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1288	-	-	58.5

Vehicle Results

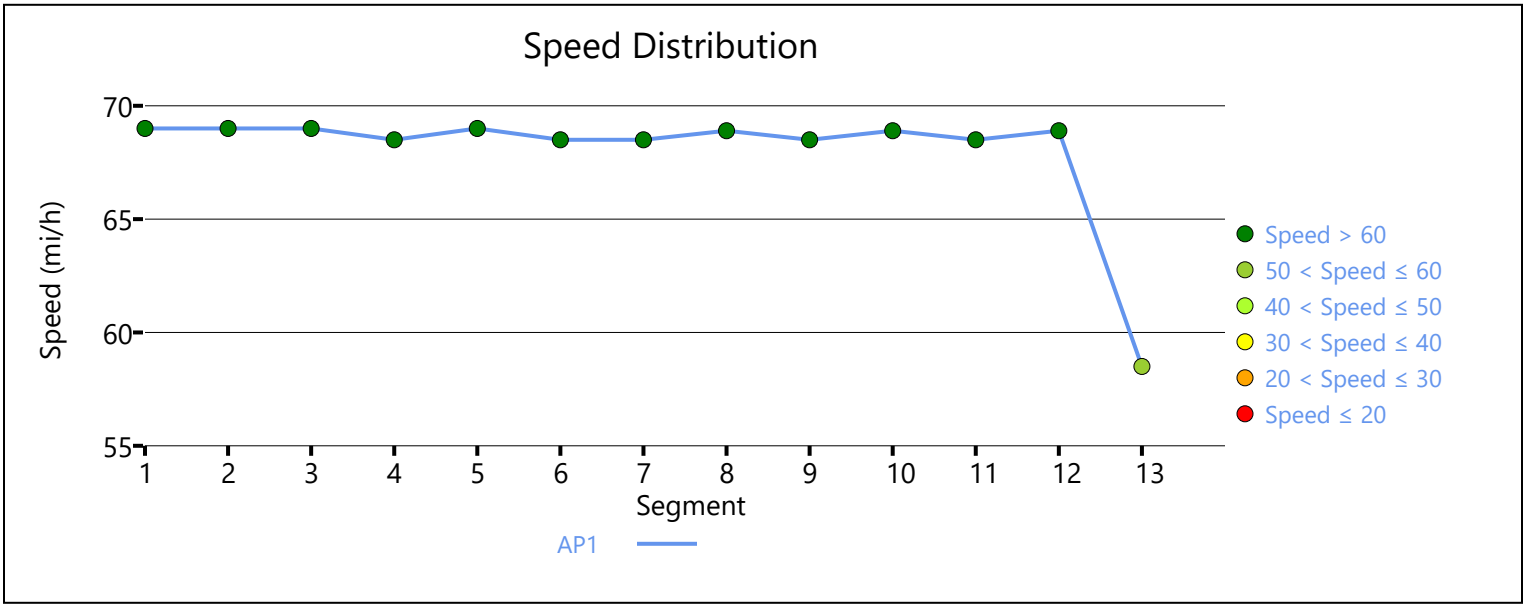
Average Speed, mi/h	58.5	Percent Followers, %	31.5
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	0.9
Vehicle LOS	A		

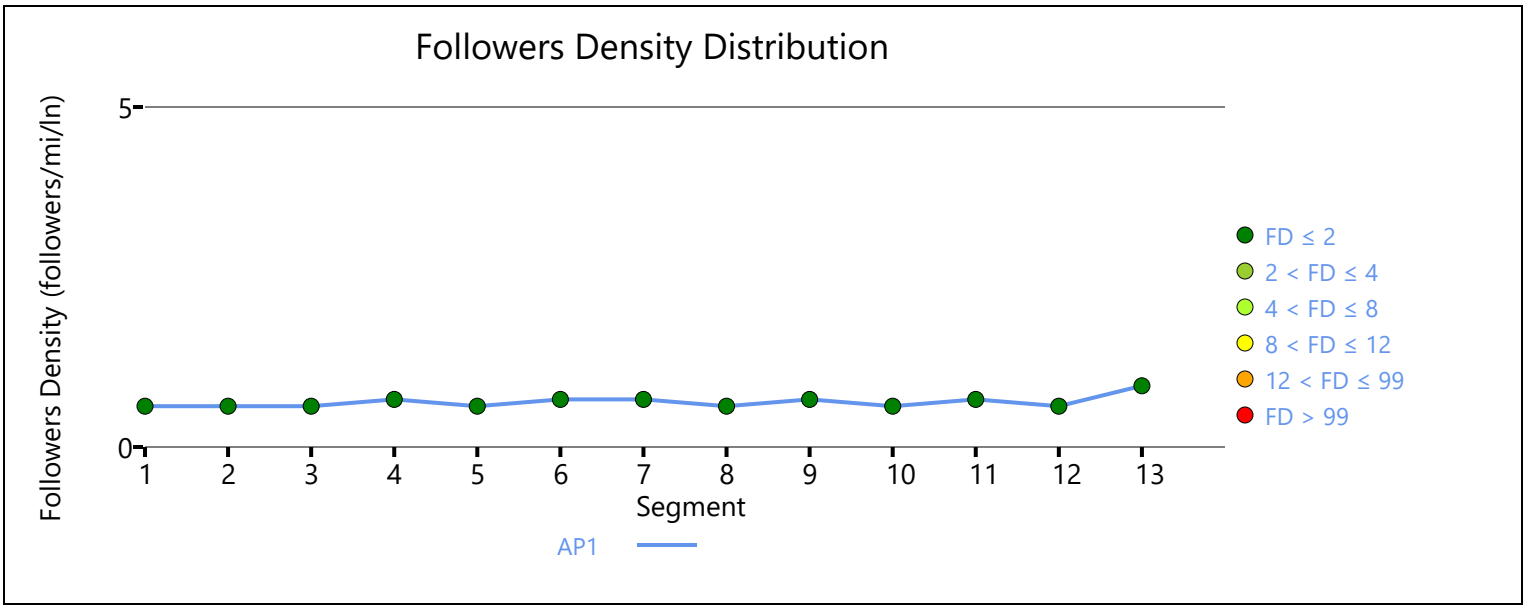
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.14	Bicycle Effective Speed Factor	4.79
Bicycle LOS	A		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	224	0.05	0.6	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/2/2024
Agency	HRG	Analysis Year	2050 Build Option 1
Jurisdiction	SDDOT	Time Analyzed	PM Peak
Project Description	WB 38 West of Hartford	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	10549
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	280	Opposing Demand Flow Rate, veh/h	164
Peak Hour Factor	0.88	Total Trucks, %	1.94
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39885	Speed Power Coefficient (p)	0.55020
PF Slope Coefficient (m)	-1.15143	PF Power Coefficient (p)	0.81244
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	10549	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	33.6
Segment Travel Time, minutes	1.76	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	280	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.64	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2793
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	280	Opposing Demand Flow Rate, veh/h	164
Peak Hour Factor	0.88	Total Trucks, %	1.94
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32824	Speed Power Coefficient (p)	0.55020
PF Slope Coefficient (m)	-1.17723	PF Power Coefficient (p)	0.83227
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2793	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	33.5
Segment Travel Time, minutes	0.46	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	280	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.64	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3825
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	289	Opposing Demand Flow Rate, veh/h	164
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34098	Speed Power Coefficient (p)	0.55020
PF Slope Coefficient (m)	-1.15833	PF Power Coefficient (p)	0.83897
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3825	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	33.5
Segment Travel Time, minutes	0.64	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	289	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	791
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	289	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29358	PF Power Coefficient (p)	0.75776
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	791	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.6
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	289	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3414
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	289	Opposing Demand Flow Rate, veh/h	164
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33614	Speed Power Coefficient (p)	0.55020
PF Slope Coefficient (m)	-1.16472	PF Power Coefficient (p)	0.83695
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3414	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	33.7
Segment Travel Time, minutes	0.57	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	289	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	286
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	289	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29358	PF Power Coefficient (p)	0.75776
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	286	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.6
Segment Travel Time, minutes	0.05	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	289	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	463
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29347	PF Power Coefficient (p)	0.75789
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	463	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.4
Segment Travel Time, minutes	0.08	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4822
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	157
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34895	Speed Power Coefficient (p)	0.55243
PF Slope Coefficient (m)	-1.14563	PF Power Coefficient (p)	0.84199
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4822	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	33.0
Segment Travel Time, minutes	0.80	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	861
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29347	PF Power Coefficient (p)	0.75789
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	861	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.4
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1556
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	157
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30647	Speed Power Coefficient (p)	0.55243
PF Slope Coefficient (m)	-1.21611	PF Power Coefficient (p)	0.81541
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1556	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	35.5
Segment Travel Time, minutes	0.26	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	799
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29347	PF Power Coefficient (p)	0.75789
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	799	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.4
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 12

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	857
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	157
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30206	Speed Power Coefficient (p)	0.55243
PF Slope Coefficient (m)	-1.22789	PF Power Coefficient (p)	0.81007
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	857	-	-	68.3

Vehicle Results			
Average Speed, mi/h	68.3	Percent Followers, %	36.0
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 13

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1288
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39671	PF Power Coefficient (p)	0.73647

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1288	-	-	57.7

Vehicle Results

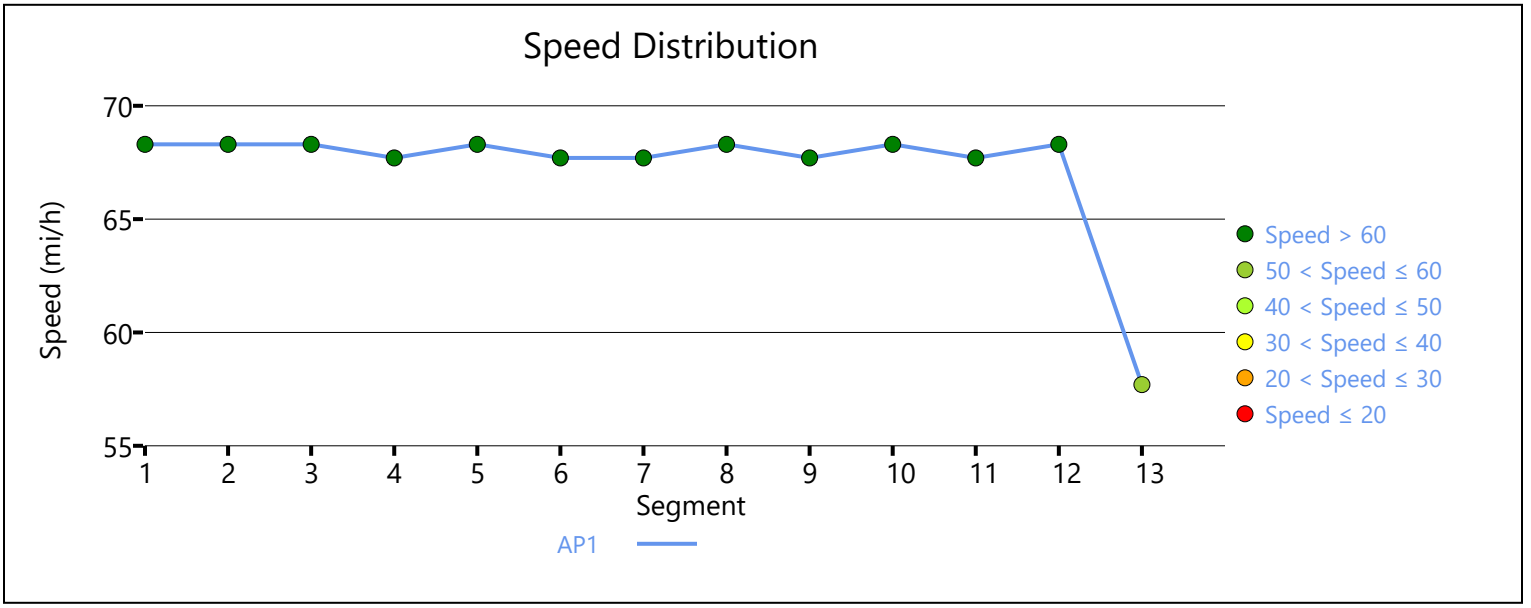
Average Speed, mi/h	57.7	Percent Followers, %	42.7
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	2.1
Vehicle LOS	B		

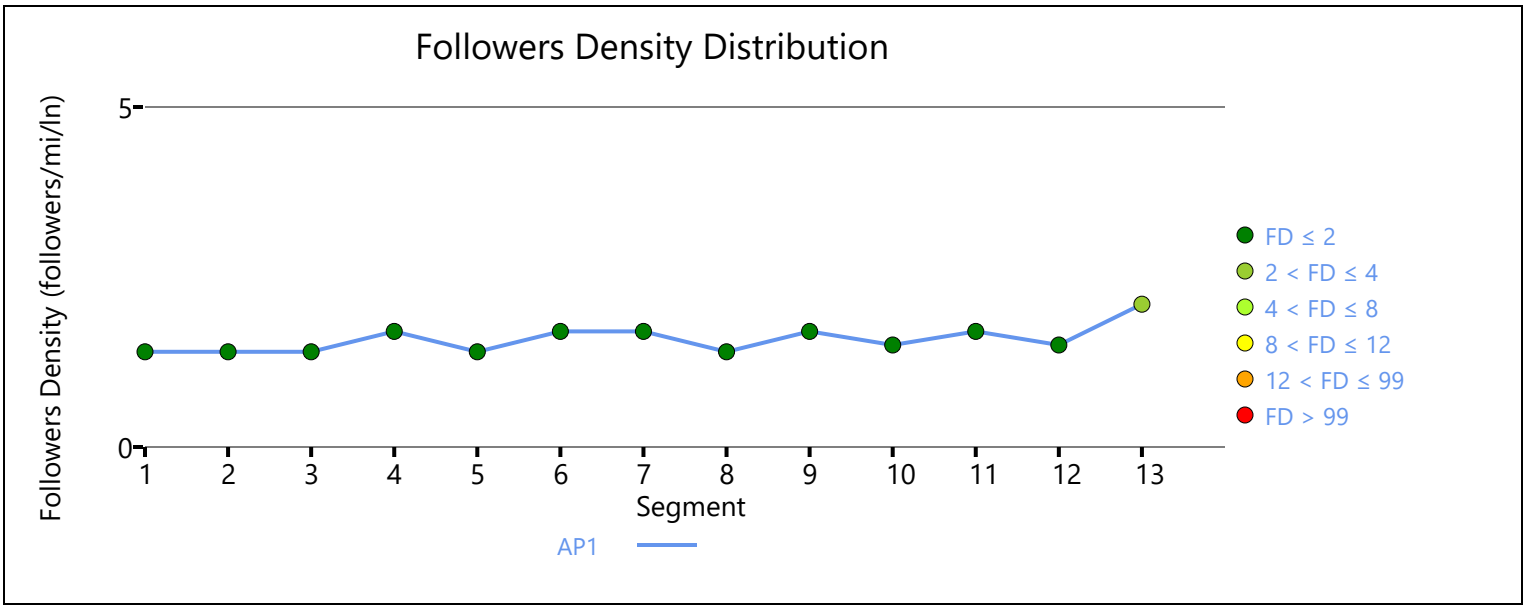
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.86	Bicycle Effective Speed Factor	4.79
Bicycle LOS	C		

Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	382	0.15	1.5	A





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HCS Two-Way Stop-Control Report

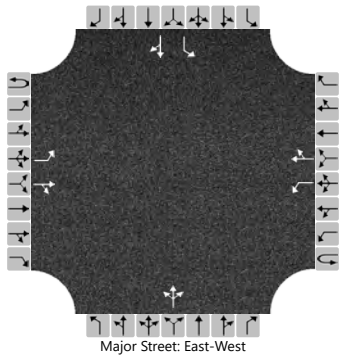
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD 38 & SD 19
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	SD 19
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		1	1	0
Configuration		L		TR		L		TR			LTR			L		TR
Volume (veh/h)		55	165	0		0	120	50		10	5	10		70	0	95
Percent Heavy Vehicles (%)		30				3				3	3	3		9	3	11
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.40				4.13				7.13	6.53	6.23		7.19	6.53	6.31
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.47				2.23				3.53	4.03	3.33		3.58	4.03	3.40

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		60				0					27			76		103
Capacity, c (veh/h)		1238				1390					524			461		865
v/c Ratio		0.05				0.00					0.05			0.16		0.12
95% Queue Length, Q_{95} (veh)		0.2				0.0					0.2			0.6		0.4
Control Delay (s/veh)		8.1	0.2	0.2		7.6	0.0	0.0			12.2			14.3		9.7
Level of Service (LOS)		A	A	A		A	A	A			B			B		A
Approach Delay (s/veh)	2.2				0.0				12.2				11.7			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

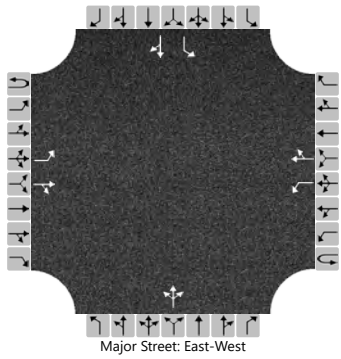
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD 38 & SD 19
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	SD 19
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		1	1	0
Configuration		L		TR		L		TR			LTR			L		TR
Volume (veh/h)		85	115	0		0	170	80		10	5	10		40	0	50
Percent Heavy Vehicles (%)		2				3				3	3	3		10	3	14
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.12				4.13				7.13	6.53	6.23		7.20	6.53	6.34
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.23				3.53	4.03	3.33		3.59	4.03	3.43

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		92				0					27			43		54
Capacity, c (veh/h)		1291				1455					498			395		782
v/c Ratio		0.07				0.00					0.05			0.11		0.07
95% Queue Length, Q_{95} (veh)		0.2				0.0					0.2			0.4		0.2
Control Delay (s/veh)		8.0	0.2	0.2		7.5	0.0	0.0			12.6			15.2		9.9
Level of Service (LOS)		A	A	A		A	A	A			B			C		A
Approach Delay (s/veh)	3.5				0.0				12.6				12.3			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

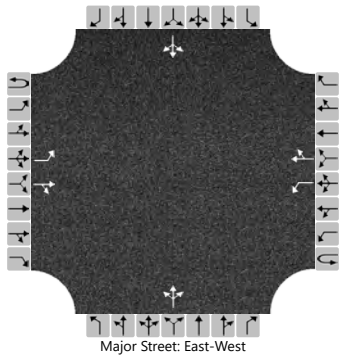
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD 38 & 459th
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	459th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		0	215	7		2	155	0		15	0	7		9	0	0
Percent Heavy Vehicles (%)		3				3				13	0	0		0	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.23	6.50	6.20		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.62	4.00	3.30		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				2					24				10	
Capacity, c (veh/h)		1403				1319					596				546	
v/c Ratio		0.00				0.00					0.04				0.02	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.1				0.1	
Control Delay (s/veh)		7.6	0.0	0.0		7.7	0.0	0.0			11.3				11.7	
Level of Service (LOS)		A	A	A		A	A	A			B				B	
Approach Delay (s/veh)	0.0				0.1				11.3				11.7			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

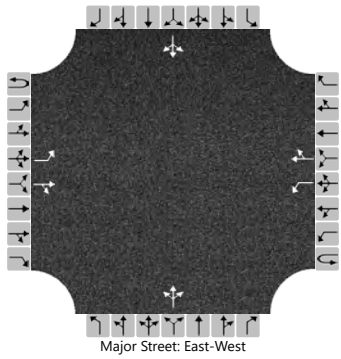
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD 38 & 459th
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	459th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		0	145	9		15	245	2		15	0	4		2	2	0
Percent Heavy Vehicles (%)		0				0				13	0	0		0	100	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.23	6.50	6.20		7.10	7.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.62	4.00	3.30		3.50	4.90	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				16					21				4	
Capacity, c (veh/h)		1307				1423					534				427	
v/c Ratio		0.00				0.01					0.04				0.01	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.1				0.0	
Control Delay (s/veh)		7.8	0.0	0.0		7.6	0.1	0.1			12.0				13.5	
Level of Service (LOS)		A	A	A		A	A	A			B				B	
Approach Delay (s/veh)	0.0				0.5				12.0				13.5			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

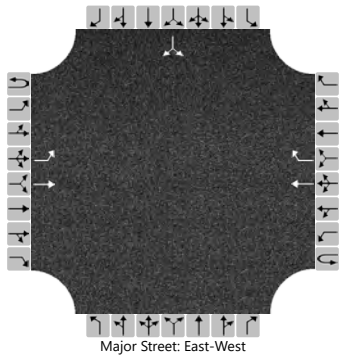
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD 38 & I-90 Speedway
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 Expressway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		L	T				T	R							LR	
Volume (veh/h)		0	230				165	0						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													0	
Capacity, c (veh/h)		1390													0	
v/c Ratio		0.00														
95% Queue Length, Q_{95} (veh)		0.0														
Control Delay (s/veh)		7.6	0.0													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)		0.0														
Approach LOS		A														

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HCS Two-Way Stop-Control Report

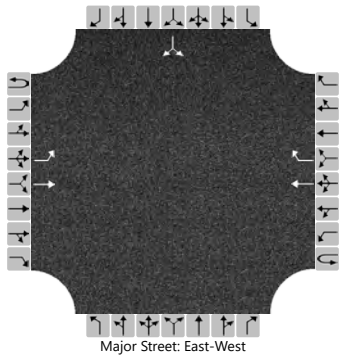
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak - Event Traffic
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD 38 & I-90 Speedway
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 Expressway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		L	T				T	R							LR	
Volume (veh/h)		0	412				295	0						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													0	
Capacity, c (veh/h)		1234													0	
v/c Ratio		0.00														
95% Queue Length, Q_{95} (veh)		0.0														
Control Delay (s/veh)		7.9	0.0													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)		0.0														
Approach LOS		A														

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HCS Two-Way Stop-Control Report

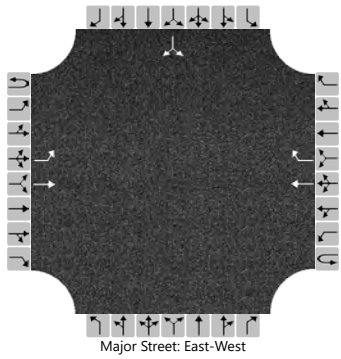
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD 38 & I-90 Speedway
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 Expressway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		L	T				T	R							LR	
Volume (veh/h)		0	165				260	0						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized						No										
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													0	
Capacity, c (veh/h)		1274													0	
v/c Ratio		0.00														
95% Queue Length, Q_{95} (veh)		0.0														
Control Delay (s/veh)		7.8	0.0													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)		0.0														
Approach LOS		A														

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HCS Two-Way Stop-Control Report

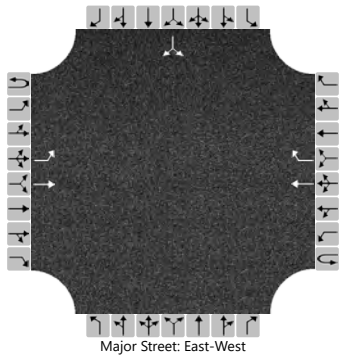
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak - Event Traffic
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD 38 & I-90 Speedway
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 Expressway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		L	T				T	R							LR	
Volume (veh/h)		0	295				465	0						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													0	
Capacity, c (veh/h)		1054													0	
v/c Ratio		0.00														
95% Queue Length, Q_{95} (veh)		0.0														
Control Delay (s/veh)		8.4	0.0													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)		0.0														
Approach LOS		A														

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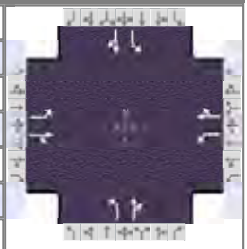
HCS Signalized Intersection Results Summary

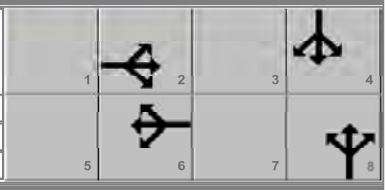
General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	CEC	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & Western Ave	File Name	(4) SD38&463WesternAve_AM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	9	180	80	60	110	30	65	75	90	40	80	5

Signal Information			
Cycle, s	50.0	Reference Phase	6
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	30.3	9.7	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	1.0	1.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		6.0		6.0		6.0
Phase Duration, s		35.3		35.3		14.7		14.7
Change Period, ($Y+R_c$), s		5.0		5.0		5.0		5.0
Max Allow Headway (*MAH*), s		0.0		0.0		4.3		4.3
Queue Clearance Time (g_s), s						7.0		8.7
Green Extension Time (g_e), s		0.0		0.0		1.2		1.1
Phase Call Probability						1.00		1.00
Max Out Probability						0.03		0.07

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	10	283		65	152		71	179		43	92	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1225	1666		1088	1693		1180	1614		1205	1684	
Queue Service Time (g_s), s	0.2	4.0		1.5	2.0		2.7	5.0		1.7	2.3	
Cycle Queue Clearance Time (g_c), s	2.2	4.0		5.6	2.0		5.0	5.0		6.7	2.3	
Green Ratio (*g/C*)	0.61	0.61		0.61	0.61		0.19	0.19		0.19	0.19	
Capacity (*c*), veh/h	836	1007		713	1023		320	315		259	329	
Volume-to-Capacity Ratio (*X*)	0.012	0.281		0.092	0.149		0.220	0.569		0.168	0.281	
Back of Queue (*Q*), ft/ln (95 th percentile)	1.6	46.2		13.6	22.3		34.3	80.9		20.5	39.4	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.1	1.8		0.5	0.9		1.2	3.2		0.8	1.5	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.01	0.00		0.05	0.00		0.14	0.00		0.08	0.00	
Uniform Delay (d_1), s/veh	4.8	4.7		6.1	4.3		19.2	18.2		21.2	17.1	
Incremental Delay (d_2), s/veh	0.0	0.7		0.3	0.3		0.3	1.6		0.3	0.5	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	4.8	5.4		6.3	4.6		19.6	19.8		21.5	17.6	
Level of Service (LOS)	A	A		A	A		B	B		C	B	
Approach Delay, s/veh / LOS	5.4	A		5.1	A		19.7	B		18.8	B	
Intersection Delay, s/veh / LOS	11.4						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.85	B	1.85	B	1.91	B	1.91	B
Bicycle LOS Score / LOS	0.97	A	0.85	A	0.90	A	0.71	A

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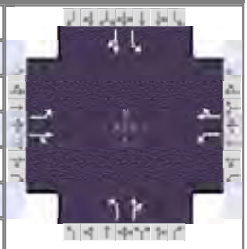
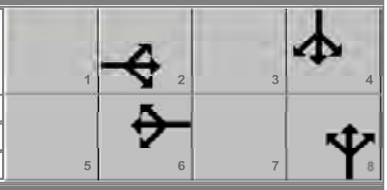
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	CEC	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	PM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & Western Ave	File Name	(4) SD38&463WesternAve_PM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	15	125	55	120	200	60	70	85	155	55	100	25

Signal Information												
Cycle, s	50.0	Reference Phase	6									
Offset, s	0	Reference Point	End	Green	26.5	13.5	0.0	0.0	0.0	0.0		
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	1.0	0.0	0.0	0.0	0.0		



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		6.0		6.0		6.0
Phase Duration, s		31.5		31.5		18.5		18.5
Change Period, ($Y+R_c$), s		5.0		5.0		5.0		5.0
Max Allow Headway (*MAH*), s		0.0		0.0		4.3		4.3
Queue Clearance Time (g_s), s						9.8		12.3
Green Extension Time (g_e), s		0.0		0.0		1.5		1.2
Phase Call Probability						1.00		1.00
Max Out Probability						0.18		0.43

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	16	196		130	283		76	261		60	136	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	923	1680		1178	1701		1253	1474		1119	1683	
Queue Service Time (g_s), s	0.5	3.1		3.3	4.7		2.6	7.8		2.5	3.2	
Cycle Queue Clearance Time (g_c), s	5.3	3.1		6.5	4.7		5.7	7.8		10.3	3.2	
Green Ratio (*g/C*)	0.53	0.53		0.53	0.53		0.27	0.27		0.27	0.27	
Capacity (*c*), veh/h	545	889		693	901		404	399		272	455	
Volume-to-Capacity Ratio (*X*)	0.030	0.220		0.188	0.314		0.188	0.654		0.219	0.298	
Back of Queue (*Q*), ft/ln (95 th percentile)	5	41.2		34.4	63.5		30.4	118.8		27.9	50.3	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.2	1.6		1.3	2.5		1.2	4.4		1.1	2.0	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.02	0.00		0.14	0.00		0.12	0.00		0.11	0.00	
Uniform Delay (d_1), s/veh	8.1	6.3		8.0	6.6		16.7	16.2		20.7	14.5	
Incremental Delay (d_2), s/veh	0.1	0.6		0.6	0.9		0.2	1.8		0.4	0.4	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	8.2	6.8		8.6	7.5		16.9	18.0		21.1	14.8	
Level of Service (LOS)	A	A		A	A		B	B		C	B	
Approach Delay, s/veh / LOS	6.9	A		7.9	A		17.8	B		16.8	B	
Intersection Delay, s/veh / LOS	12.1						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.87	B	1.87	B	1.90	B	1.90	B
Bicycle LOS Score / LOS	0.84	A	1.17	A	1.04	A	0.81	A

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HCS Two-Way Stop-Control Report

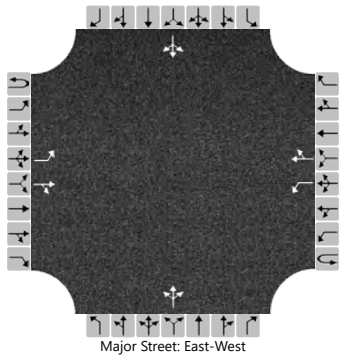
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD 38 & Main Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Main Ave (9th St)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		2	260	30		40	195	20		40	5	85		6	10	4
Percent Heavy Vehicles (%)		0				11				5	0	2		0	17	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Left Only								9						

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.21				7.15	6.50	6.22		7.10	6.67	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.30				3.55	4.00	3.32		3.50	4.15	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2				43					141				22	
Capacity, c (veh/h)		1346				1196					678				459	
v/c Ratio		0.00				0.04					0.21				0.05	
95% Queue Length, Q_{95} (veh)		0.0				0.1					0.8				0.1	
Control Delay (s/veh)		7.7				8.1					11.7				13.2	
Level of Service (LOS)		A				A					B				B	
Approach Delay (s/veh)	0.1				1.3				11.7				13.2			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

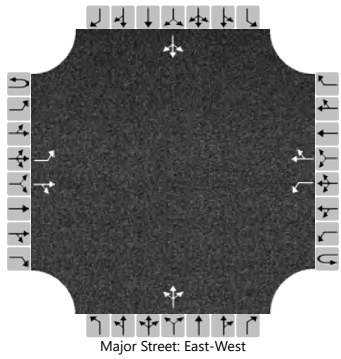
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD 38 & Main Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Main Ave (9th St)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		10	250	45		65	335	60		35	20	55		40	30	7
Percent Heavy Vehicles (%)		0				0				5	0	0		0	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Left Only								9						

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.15	6.50	6.20		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.55	4.00	3.30		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11				71					120				84	
Capacity, c (veh/h)		1141				1251					467				368	
v/c Ratio		0.01				0.06					0.26				0.23	
95% Queue Length, Q_{95} (veh)		0.0				0.2					1.0				0.9	
Control Delay (s/veh)		8.2				8.1					15.3				17.6	
Level of Service (LOS)		A				A					C				C	
Approach Delay (s/veh)	0.3				1.1				15.3				17.6			
Approach LOS	A				A				C				C			

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HCS Two-Way Stop-Control Report

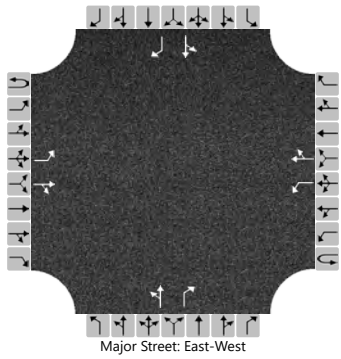
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD 38 & Vandemark Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Vandemark Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	1		0	1	1
Configuration		L		TR		L		TR		LT		R		LT		R
Volume (veh/h)		25	370	10		8	240	25		9	5	10		40	2	25
Percent Heavy Vehicles (%)		0				0				40	0	0		0	0	7
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized										No				No		
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.50	6.50	6.20		7.10	6.50	6.27
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.86	4.00	3.30		3.50	4.00	3.36

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		27				9				15		11		46		27
Capacity, c (veh/h)		1286				1157				278		648		306		752
v/c Ratio		0.02				0.01				0.05		0.02		0.15		0.04
95% Queue Length, Q_{95} (veh)		0.1				0.0				0.2		0.1		0.5		0.1
Control Delay (s/veh)		7.9	0.1	0.1		8.1	0.1	0.1		18.7		10.7		18.8		10.0
Level of Service (LOS)		A	A	A		A	A	A		C		B		C		A
Approach Delay (s/veh)	0.6				0.3				15.4				15.5			
Approach LOS	A				A				C				C			

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HCS Two-Way Stop-Control Report

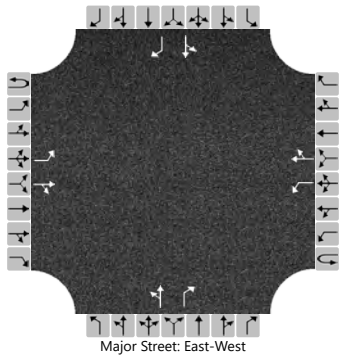
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD 38 & Vandemark Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Vandemark Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	1		0	1	1
Configuration		L		TR		L		TR		LT		R		LT		R
Volume (veh/h)		20	255	4		5	475	45		0	0	9		30	0	25
Percent Heavy Vehicles (%)		0				0				0	0	100		0	0	7
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized										No				No		
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	7.20		7.10	6.50	6.27
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	4.20		3.50	4.00	3.36

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		22				5				0		10		33		27
Capacity, c (veh/h)		1017				1293				0		574		259		532
v/c Ratio		0.02				0.00						0.02		0.13		0.05
95% Queue Length, Q_{95} (veh)		0.1				0.0						0.1		0.4		0.2
Control Delay (s/veh)		8.6	0.2	0.2		7.8	0.0	0.0				11.4		20.9		12.1
Level of Service (LOS)		A	A	A		A	A	A				B		C		B
Approach Delay (s/veh)	0.8				0.1								16.9			
Approach LOS	A				A								C			

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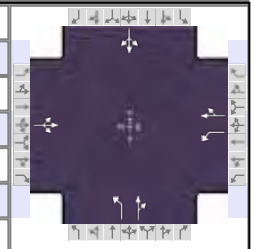
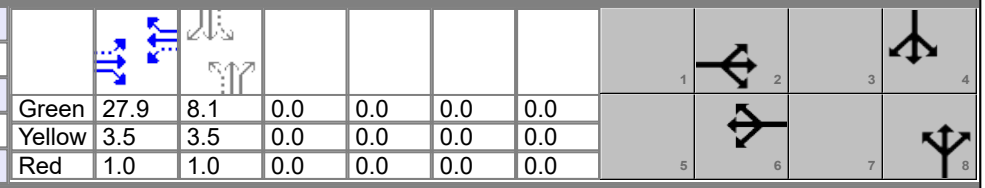
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & 2nd Street	File Name	(7) SD38&2nd_AM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	20	325	10	95	200	15	5	20	155	35	50	25

Signal Information			
Cycle, s	45.0	Reference Phase	6
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	27.9	8.1	0.0	0.0	0.0	0.0						
Yellow	3.5	3.5	0.0	0.0	0.0	0.0						
Red	1.0	1.0	0.0	0.0	0.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		6.0		6.0		8.0
Phase Duration, s		32.4		32.4		12.6		12.6
Change Period, ($Y+R_c$), s		4.5		4.5		4.5		4.5
Max Allow Headway (*MAH*), s		0.0		0.0		3.3		3.3
Queue Clearance Time (g_s), s						7.8		7.5
Green Extension Time (g_e), s		0.0		0.0		0.5		0.5
Phase Call Probability						0.98		0.98
Max Out Probability						0.01		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h		386		103	234		5	190			120	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1743		1018	1750		1317	1528			1105	
Queue Service Time (g_s), s		0.0		2.5	2.6		0.2	5.2			0.2	
Cycle Queue Clearance Time (g_c), s		4.8		7.3	2.6		5.8	5.2			5.5	
Green Ratio (*g/C*)		0.62		0.62	0.62		0.18	0.18			0.18	
Capacity (*c*), veh/h		1162		681	1082		236	278			306	
Volume-to-Capacity Ratio (*X*)		0.332		0.152	0.216		0.023	0.685			0.391	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)		1.9		0.8	1.1		0.1	2.9			1.7	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00		0.08	0.00		0.02	0.00			0.00	
Uniform Delay (d_1), s/veh		4.2		6.0	3.8		20.1	17.2			16.3	
Incremental Delay (d_2), s/veh		0.8		0.5	0.5		0.0	1.1			0.3	
Initial Queue Delay (d_3), s/veh		0.0		0.0	0.0		0.0	0.0			0.0	
Control Delay (*d*), s/veh		5.0		6.4	4.2		20.1	18.3			16.6	
Level of Service (LOS)		A		A	A		C	B			B	
Approach Delay, s/veh / LOS	5.0	A		4.9	A		18.4	B		16.6	B	
Intersection Delay, s/veh / LOS	8.8						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.84	B	1.62	B	1.91	B	1.68	B
Bicycle LOS Score / LOS	1.12	A	1.04	A	0.81	A	0.68	A

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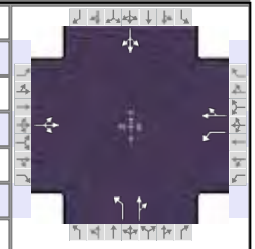
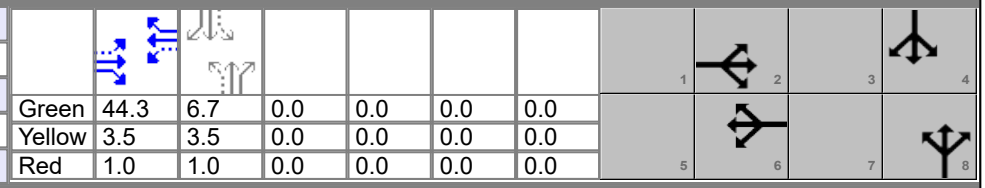
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	PM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & 2nd Street	File Name	(7) SD38&2nd_PM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	25	235	9	130	490	25	15	25	65	15	30	20

Signal Information			
Cycle, s	60.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	44.3	6.7	0.0	0.0	0.0	0.0						
Yellow	3.5	3.5	0.0	0.0	0.0	0.0						
Red	1.0	1.0	0.0	0.0	0.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		6.0		6.0		8.0
Phase Duration, s		48.8		48.8		11.2		11.2
Change Period, ($Y+R_c$), s		4.5		4.5		4.5		4.5
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.2
Queue Clearance Time (g_s), s						6.2		5.6
Green Extension Time (g_e), s		0.0		0.0		0.3		0.3
Phase Call Probability						0.95		0.95
Max Out Probability						0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h		292		141	560		16	98			71	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1663		1114	1757		1350	1568			1377	
Queue Service Time (g_s), s		0.0		2.7	7.3		0.7	3.5			0.0	
Cycle Queue Clearance Time (g_c), s		3.1		5.9	7.3		4.2	3.5			3.6	
Green Ratio (*g/C*)		0.74		0.74	0.74		0.11	0.11			0.11	
Capacity (*c*), veh/h		1294		885	1298		190	175			227	
Volume-to-Capacity Ratio (*X*)		0.226		0.160	0.431		0.086	0.560			0.311	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)		1.0		0.8	2.5		0.4	2.3			1.6	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00		0.08	0.00		0.07	0.00			0.00	
Uniform Delay (d_1), s/veh		2.5		3.4	3.0		27.3	25.3			24.7	
Incremental Delay (d_2), s/veh		0.4		0.4	1.0		0.1	1.0			0.3	
Initial Queue Delay (d_3), s/veh		0.0		0.0	0.0		0.0	0.0			0.0	
Control Delay (*d*), s/veh		2.9		3.8	4.1		27.4	26.3			25.0	
Level of Service (LOS)		A		A	A		C	C			C	
Approach Delay, s/veh / LOS	2.9	A		4.0	A		26.5	C		25.0	C	
Intersection Delay, s/veh / LOS	7.2						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.83	B	1.60	B	1.92	B	1.70	B
Bicycle LOS Score / LOS	0.97	A	1.64	B	0.68	A	0.60	A

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HCS Two-Way Stop-Control Report

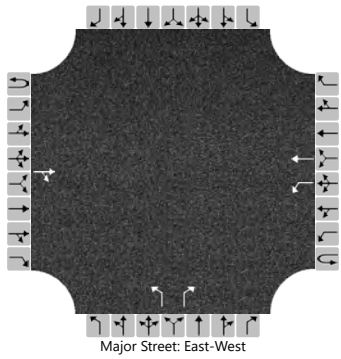
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD 38 & West Central HS Entrance
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	West Central HS Entrance
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		1	0	1		0	0	0
Configuration				TR		L	T			L		R				
Volume (veh/h)			425	90		55	285			35		50				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage			Left Only							9						

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						60				38		54				
Capacity, c (veh/h)						1021				576		567				
v/c Ratio						0.06				0.07		0.10				
95% Queue Length, Q_{95} (veh)						0.2				0.2		0.3				
Control Delay (s/veh)						8.7				11.7		12.0				
Level of Service (LOS)						A				B		B				
Approach Delay (s/veh)						1.4				11.9						
Approach LOS						A				B						

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HCS Two-Way Stop-Control Report

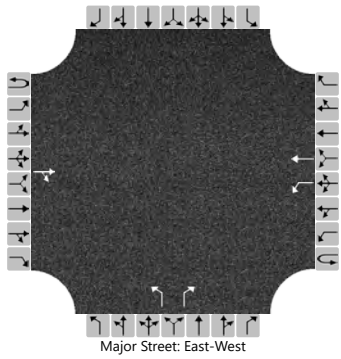
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD 38 & West Central HS Entrance
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	West Central HS Entrance
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		1	0	1		0	0	0
Configuration				TR		L	T			L		R				
Volume (veh/h)			305	4		4	620			15		15				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage			Left Only							9						

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						4				16		16				
Capacity, c (veh/h)						1235				500		713				
v/c Ratio						0.00				0.03		0.02				
95% Queue Length, Q_{95} (veh)						0.0				0.1		0.1				
Control Delay (s/veh)						7.9				12.4		10.2				
Level of Service (LOS)						A				B		B				
Approach Delay (s/veh)						0.1				11.3						
Approach LOS						A				B						

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HCS Two-Way Stop-Control Report

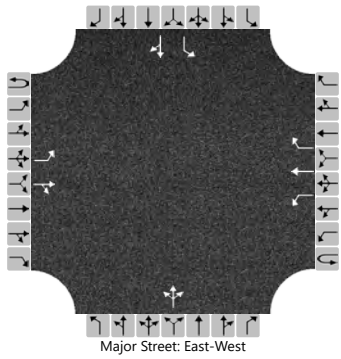
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD 38 & Railroad Street
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Railroad St
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		0	1	0		1	1	0
Configuration		L		TR		L	T	R			LTR			L		TR
Volume (veh/h)		4	465	0		15	270	95		2	0	30		145	4	5
Percent Heavy Vehicles (%)		0				0				0	0	15		0	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized						No										
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.35		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.44		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		4				16					35			158		10
Capacity, c (veh/h)		1173				1070					505			258		448
v/c Ratio		0.00				0.02					0.07			0.61		0.02
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.2			3.6		0.1
Control Delay (s/veh)		8.1	0.0	0.0		8.4	0.1				12.6			38.6		13.2
Level of Service (LOS)		A	A	A		A	A				B			E		B
Approach Delay (s/veh)	0.1				0.4				12.6				37.1			
Approach LOS	A				A				B				E			

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HCS Two-Way Stop-Control Report

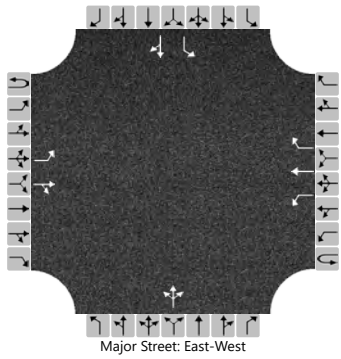
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/29/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD 38 & Railroad Street
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Railroad St
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		0	1	0		1	1	0
Configuration		L		TR		L	T	R			LTR			L		TR
Volume (veh/h)		4	340	4		15	560	155		2	2	15		85	9	5
Percent Heavy Vehicles (%)		0				40				0	0	15		5	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized						No										
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.50				7.10	6.50	6.35		7.15	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.56				3.50	4.00	3.44		3.55	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		4				16					21			92		15
Capacity, c (veh/h)		848				1004					417			197		287
v/c Ratio		0.01				0.02					0.05			0.47		0.05
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.2			2.3		0.2
Control Delay (s/veh)		9.3	0.0	0.0		8.6	0.1				14.1			38.5		18.2
Level of Service (LOS)		A	A	A		A	A				B			E		C
Approach Delay (s/veh)	0.2				0.3				14.1				35.7			
Approach LOS	A				A				B				E			

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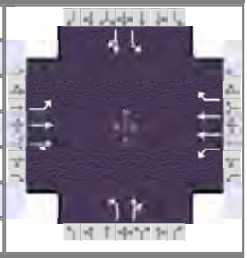
HCS Signalized Intersection Results Summary

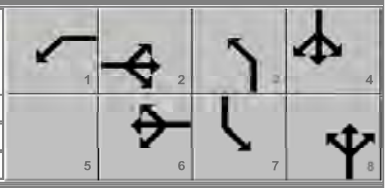
General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & Mickelson Roa…	File Name	(10) SD38&Mickelson_AM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	135	445	35	40	195	190	45	55	65	215	20	195

Signal Information			
Cycle, s	70.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	2.9	35.1	3.1	2.9	10.0	0.0
Yellow	4.0	4.0	4.0	0.0	4.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6	3	8	7	4
Case Number		6.3	1.0	3.0	1.1	4.0	1.1	4.0
Phase Duration, s		39.1	6.9	46.0	7.1	14.0	10.0	16.9
Change Period, ($Y+R_c$), s		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s		0.0	3.1	0.0	3.1	3.3	3.1	3.3
Queue Clearance Time (g_s), s			2.8		3.7	7.3	8.0	12.3
Green Extension Time (g_e), s		0.0	0.0	0.0	0.0	0.5	0.0	0.6
Phase Call Probability			0.57		0.61	1.00	0.99	1.00
Max Out Probability			0.00		1.00	0.03	1.00	0.01

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	147	264	258	43	212	207	49	130		234	234	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1170	1772	1726	1688	1687	1323	1688	1615		1688	1523	
Queue Service Time (g_s), s	5.0	6.1	6.1	0.8	1.9	5.2	1.7	5.3		6.0	10.3	
Cycle Queue Clearance Time (g_c), s	5.0	6.1	6.1	0.8	1.9	5.2	1.7	5.3		6.0	10.3	
Green Ratio (*g/C*)	0.50	0.50	0.50	0.57	0.60	0.60	0.19	0.14		0.24	0.18	
Capacity (*c*), veh/h	690	890	867	536	2024	794	187	231		333	282	
Volume-to-Capacity Ratio (*X*)	0.213	0.296	0.298	0.081	0.105	0.260	0.262	0.565		0.702	0.830	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	2.2	4.0	4.0	0.4	1.0	2.4	1.2	3.5		2.5	6.7	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	
Uniform Delay (d_1), s/veh	9.9	10.2	10.2	7.1	6.0	6.6	24.5	28.0		25.5	27.5	
Incremental Delay (d_2), s/veh	0.7	0.8	0.9	0.0	0.1	0.8	0.3	0.8		5.5	2.4	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	10.6	11.0	11.1	7.1	6.1	7.4	24.8	28.8		31.1	29.9	
Level of Service (LOS)	B	B	B	A	A	A	C	C		C	C	
Approach Delay, s/veh / LOS	11.0	B		6.8	A		27.7	C		30.5	C	
Intersection Delay, s/veh / LOS	16.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.88	B	1.87	B	2.44	B	2.28	B
Bicycle LOS Score / LOS	1.04	A	0.87	A	0.78	A	1.26	A

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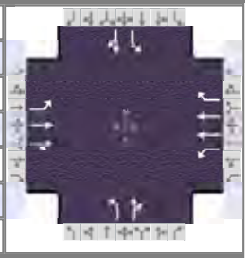
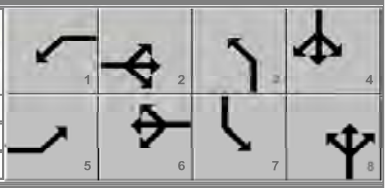
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & Mickelson Roa…	File Name	(10) SD38&Mickelson_PM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	160	220	20	135	535	225	20	65	10	215	15	185

Signal Information												
Cycle, s	70.0	Reference Phase	2									
Offset, s	0	Reference Point	End	Green	5.0	0.7	30.8	1.7	1.3	7.0		
Uncoordinated	No	Simult. Gap E/W	On	Yellow	3.5	0.0	4.0	3.5	3.5	4.0		
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	0.0	1.0	1.0	1.0	1.0		



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	4.0	1.1	3.0	1.1	4.0	1.1	4.0
Phase Duration, s	10.2	36.5	9.5	35.8	6.2	12.0	12.0	17.8
Change Period, ($Y+R_c$), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.3	3.1	3.3
Queue Clearance Time (g_s), s	5.8		5.3		2.8	5.1	9.5	11.6
Green Extension Time (g_e), s	0.1	0.0	0.1	0.0	0.0	0.3	0.0	0.2
Phase Call Probability	0.97		0.94		0.34	1.00	0.99	1.00
Max Out Probability	1.00		1.00		1.00	0.63	1.00	1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	174	131	130	147	582	245	22	82		234	217	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1688	1772	1720	1688	1687	1323	1688	1730		1688	1519	
Queue Service Time (g_s), s	3.8	3.1	3.1	3.3	8.2	8.9	0.8	3.1		7.5	9.6	
Cycle Queue Clearance Time (g_c), s	3.8	3.1	3.1	3.3	8.2	8.9	0.8	3.1		7.5	9.6	
Green Ratio (*g/C*)	0.52	0.45	0.45	0.51	0.44	0.44	0.12	0.10		0.24	0.18	
Capacity (*c*), veh/h	510	798	774	645	1484	582	164	173		356	277	
Volume-to-Capacity Ratio (*X*)	0.341	0.165	0.167	0.228	0.392	0.420	0.132	0.472		0.656	0.785	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	2.2	2.1	2.1	1.9	5.2	4.8	0.6	2.3		6.3	7.1	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	
Uniform Delay (d_1), s/veh	9.5	11.4	11.4	9.3	13.3	13.5	27.4	29.8		24.6	27.3	
Incremental Delay (d_2), s/veh	0.1	0.4	0.5	0.1	0.8	2.2	0.1	0.7		3.4	8.9	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	9.7	11.9	11.9	9.4	14.0	15.7	27.6	30.5		28.0	36.2	
Level of Service (LOS)	A	B	B	A	B	B	C	C		C	D	
Approach Delay, s/veh / LOS	11.0	B		13.8	B		29.9	C		32.0	C	
Intersection Delay, s/veh / LOS	18.2						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.89	B	1.89	B	2.44	B	2.28	B
Bicycle LOS Score / LOS	0.85	A	1.29	A	0.66	A	1.23	A

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HCS Two-Way Stop-Control Report

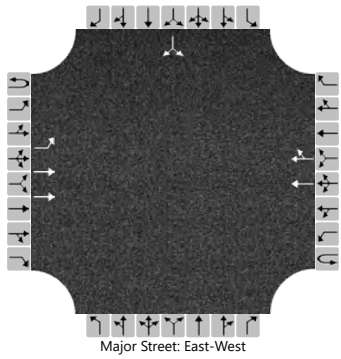
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD38 & 466th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	466th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		0	1	0
Configuration		L	T				T	TR							LR	
Volume (veh/h)	0	2	765				430	5						4		0
Percent Heavy Vehicles (%)	3	0												50		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Left Only								9							

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.10												7.80		6.96
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												4.00		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2													4	
Capacity, c (veh/h)		1100													457	
v/c Ratio		0.00													0.01	
95% Queue Length, Q_{95} (veh)		0.0													0.0	
Control Delay (s/veh)		8.3													12.9	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)	0.0												12.9			
Approach LOS	A												B			

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HCS Two-Way Stop-Control Report

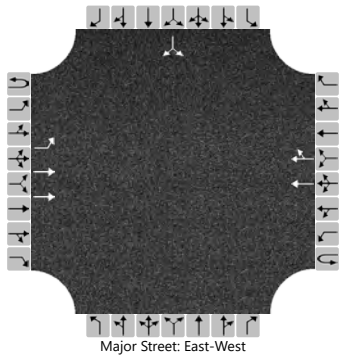
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD38 & 466th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	466th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		0	1	0
Configuration		L	T				T	TR							LR	
Volume (veh/h)	0	0	445				910	2						5		2
Percent Heavy Vehicles (%)	3	0												33		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Left Only								9							

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.10												7.46		6.90
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.83		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													8	
Capacity, c (veh/h)		705													299	
v/c Ratio		0.00													0.03	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		10.1													17.3	
Level of Service (LOS)		B													C	
Approach Delay (s/veh)	0.0												17.3			
Approach LOS	A												C			

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HCS Two-Way Stop-Control Report

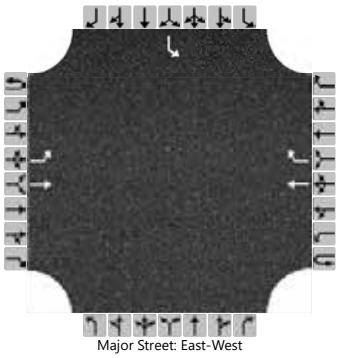
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	12/12/2023
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 WB Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 WB Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		1	0	0
Configuration		L	T				T	R						L		
Volume (veh/h)		40	730				255	20						15		
Percent Heavy Vehicles (%)		0												56		
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage							Left Only							9		

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		
Critical Headway (sec)		4.10												6.96		
Base Follow-Up Headway (sec)		2.2												3.5		
Follow-Up Headway (sec)		2.20												4.00		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		43												16		
Capacity, c (veh/h)		1274												315		
v/c Ratio		0.03												0.05		
95% Queue Length, Q_{95} (veh)		0.1												0.2		
Control Delay (s/veh)		7.9	0.2											17.1		
Level of Service (LOS)		A	A											C		
Approach Delay (s/veh)		0.6												17.1		
Approach LOS		A												C		

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HCS Two-Way Stop-Control Report

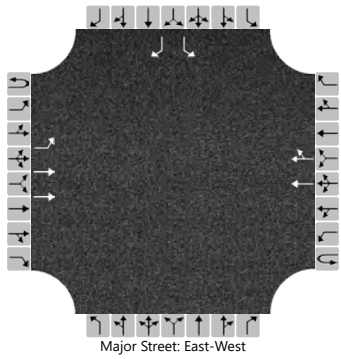
General Information

Analyst	CEC
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD 38 & I-90 WB Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 WB Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		1	0	1
Configuration		L	T				T	TR						L		R
Volume (veh/h)	0	40	730				255	20						15		190
Percent Heavy Vehicles (%)	3	0												56		12
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Left Only								9							

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.10												7.92		7.14
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												4.06		3.42

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		43												16		207
Capacity, c (veh/h)		1274												435		839
v/c Ratio		0.03												0.04		0.25
95% Queue Length, Q_{95} (veh)		0.1												0.1		1.0
Control Delay (s/veh)		7.9												13.6		10.7
Level of Service (LOS)		A												B		B
Approach Delay (s/veh)	0.4												10.9			
Approach LOS	A												B			

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HCS Two-Way Stop-Control Report

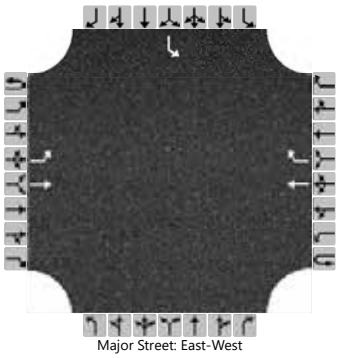
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 WB Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 WB Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		1	0	0
Configuration		L	T				T	R						L		
Volume (veh/h)		25	420				415	35						30		
Percent Heavy Vehicles (%)		0												6		
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized						No										
Median Type | Storage			Left Only								9					

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		
Critical Headway (sec)		4.10												6.46		
Base Follow-Up Headway (sec)		2.2												3.5		
Follow-Up Headway (sec)		2.20												3.55		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		27												33		
Capacity, c (veh/h)		1085												562		
v/c Ratio		0.03												0.06		
95% Queue Length, Q_{95} (veh)		0.1												0.2		
Control Delay (s/veh)		8.4	0.2											11.8		
Level of Service (LOS)		A	A											B		
Approach Delay (s/veh)		0.6												11.8		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

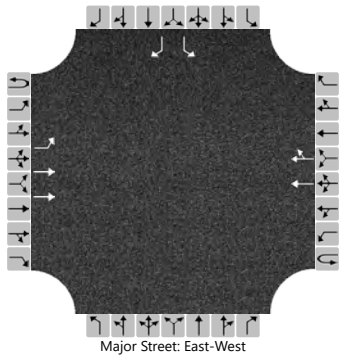
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD 38 & I-90 WB Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 WB Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		1	0	1
Configuration		L	T				T	TR						L		R
Volume (veh/h)	0	25	420				415	35						30		495
Percent Heavy Vehicles (%)	3	0												6		2
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized														No		
Median Type | Storage			Left Only								9					

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.10												6.92		6.94
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.56		3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		27												33		538
Capacity, c (veh/h)		1085												578		756
v/c Ratio		0.03												0.06		0.71
95% Queue Length, Q_{95} (veh)		0.1												0.2		6.1
Control Delay (s/veh)		8.4												11.6		20.6
Level of Service (LOS)		A												B		C
Approach Delay (s/veh)		0.5												20.1		
Approach LOS		A												C		

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HCS Two-Way Stop-Control Report

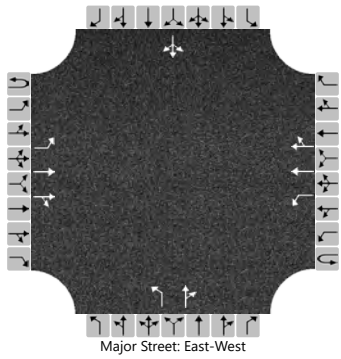
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD 38 & I-90 EB Ramp Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 EB Ramp Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		1	1	0		0	1	0
Configuration		L	T	TR		L	T	TR		L		TR			LTR	
Volume (veh/h)	0	190	265	20	0	15	420	30		30	15	25		30	10	35
Percent Heavy Vehicles (%)	3	10			3	11				20	20	0		8	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.30				4.32				7.90	6.90	6.90		7.66	6.56	6.96
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.30				2.31				3.70	4.20	3.30		3.58	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		207				16				33		43			82	
Capacity, c (veh/h)		1016				1185				122		259			193	
v/c Ratio		0.20				0.01				0.27		0.17			0.42	
95% Queue Length, Q_{95} (veh)		0.8				0.0				1.0		0.6			1.9	
Control Delay (s/veh)		9.4	0.6			8.1	0.1			44.7		21.7			36.6	
Level of Service (LOS)		A	A			A	A			E		C			E	
Approach Delay (s/veh)	4.1				0.4				31.6				36.6			
Approach LOS	A				A				D				E			

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HCS Two-Way Stop-Control Report

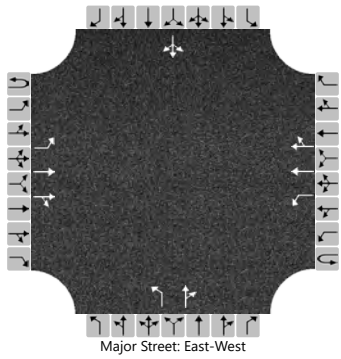
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD38/I-90 EB Ramp Terminal/466th St
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 EB Ramp Terminal/466th Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		1	1	0		0	1	0
Configuration		L	T	TR		L	T	TR		L		TR			LTR	
Volume (veh/h)	0	430	300	15	0	20	240	20		15	10	20		3	2	28
Percent Heavy Vehicles (%)	3	2			3	20				33	33	60		33	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.50				8.16	7.16	8.10		8.16	6.50	6.90
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.40				3.83	4.33	3.90		3.83	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		467				22				16		33			36	
Capacity, c (veh/h)		1277				1094				40		128			231	
v/c Ratio		0.37				0.02				0.41		0.25			0.16	
95% Queue Length, Q_{95} (veh)		1.7				0.1				1.4		1.0			0.5	
Control Delay (s/veh)		9.4	0.6			8.4	0.1			146.1		42.5			23.4	
Level of Service (LOS)		A	A			A	A			F		E			C	
Approach Delay (s/veh)	5.7				0.7				77.0				23.4			
Approach LOS	A				A				F				C			

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HCS Two-Way Stop-Control Report

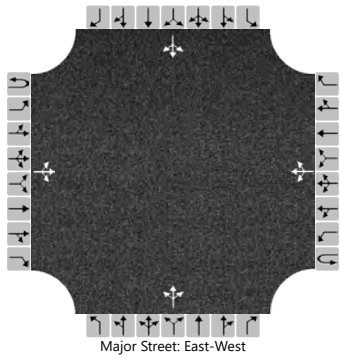
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD 38 & 468th Avenue
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	468th Ave / County Highway 141
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		4	360	0		0	225	50		2	2	0		50	0	7
Percent Heavy Vehicles (%)		0				0				0	100	0		4	0	50
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	7.50	6.20		7.14	6.50	6.70
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.90	3.30		3.54	4.00	3.75

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		4				0					4				62	
Capacity, c (veh/h)		1274				1178					306				383	
v/c Ratio		0.00				0.00					0.01				0.16	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.6	
Control Delay (s/veh)		7.8	0.0	0.0		8.1	0.0	0.0			16.9				16.2	
Level of Service (LOS)		A	A	A		A	A	A			C				C	
Approach Delay (s/veh)	0.1				0.0				16.9				16.2			
Approach LOS	A				A				C				C			

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HCS Two-Way Stop-Control Report

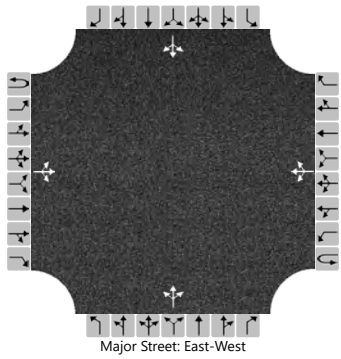
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD 38 & 468th Avenue
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	468th Ave / County Highway 141
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		0	310	2		5	420	55		2	2	0		50	4	4
Percent Heavy Vehicles (%)		0				0				0	0	0		4	100	50
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.20		7.14	7.50	6.70
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.30		3.54	4.90	3.75

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				5					4				63	
Capacity, c (veh/h)		1060				1231					285				283	
v/c Ratio		0.00				0.00					0.02				0.22	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.8	
Control Delay (s/veh)		8.4	0.0	0.0		7.9	0.0	0.0			17.8				21.3	
Level of Service (LOS)		A	A	A		A	A	A			C				C	
Approach Delay (s/veh)	0.0				0.1				17.8				21.3			
Approach LOS	A				A				C				C			

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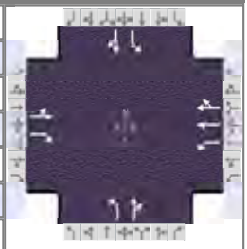
HCS Signalized Intersection Results Summary

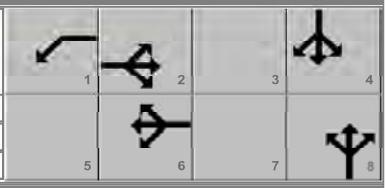
General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	CEC	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & 469th Ave	File Name	(16) SD38&469_AM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	5	330	75	75	165	5	110	5	280	15	5	5

Signal Information			
Cycle, s	60.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	3.7	26.1	15.7	0.0	0.0	0.0	
Yellow	3.5	4.0	4.0	0.0	0.0	0.0	
Red	1.0	1.0	1.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6		8		4
Case Number		7.3	1.0	4.0		6.0		6.0
Phase Duration, s		31.1	8.2	39.3		20.7		20.7
Change Period, ($Y+R_c$), s		5.0	4.5	5.0		5.0		5.0
Max Allow Headway (*MAH*), s		0.0	3.9	0.0		4.1		4.1
Queue Clearance Time (g_s), s			3.5			14.9		15.7
Green Extension Time (g_e), s		0.0	0.1	0.0		0.0		0.0
Phase Call Probability			0.74			1.00		1.00
Max Out Probability			0.20			1.00		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h		364	82	82	93	92	120	310		16	11	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1755	1490	1647	1730	1712	1426	1374		1061	1613	
Queue Service Time (g_s), s		0.0	2.0	1.5	1.5	1.5	4.1	12.9		0.9	0.3	
Cycle Queue Clearance Time (g_c), s		8.9	2.0	1.5	1.5	1.5	4.3	12.9		13.7	0.3	
Green Ratio (*g/C*)		0.43	0.43	0.53	0.57	0.57	0.26	0.26		0.26	0.26	
Capacity (*c*), veh/h		823	647	507	988	978	488	360		172	423	
Volume-to-Capacity Ratio (*X*)		0.442	0.126	0.161	0.094	0.094	0.245	0.860		0.095	0.026	
Back of Queue (*Q*), ft/ln (95 th percentile)		122.6	22.9	14.2	14.6	14.5	50.6	245.6		9.5	4.3	
Back of Queue (*Q*), veh/ln (95 th percentile)		4.8	0.9	0.5	0.6	0.6	2.0	8.9		0.4	0.2	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.00	0.06	0.00	0.00	0.20	0.00		0.04	0.00	
Uniform Delay (d_1), s/veh		12.1	10.2	8.1	5.8	5.8	18.0	21.1		27.6	16.4	
Incremental Delay (d_2), s/veh		1.7	0.4	0.1	0.2	0.2	0.3	18.5		0.2	0.0	
Initial Queue Delay (d_3), s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh		13.8	10.6	8.2	6.0	6.0	18.3	39.5		27.8	16.5	
Level of Service (LOS)		B	B	A	A	A	B	D		C	B	
Approach Delay, s/veh / LOS	13.2	B		6.7	A		33.6	C		23.3	C	
Intersection Delay, s/veh / LOS	19.5						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.89	B	1.87	B	2.10	B	2.10	B
Bicycle LOS Score / LOS	1.22	A	0.71	A	1.20	A	0.53	A

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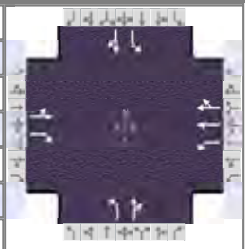
HCS Signalized Intersection Results Summary

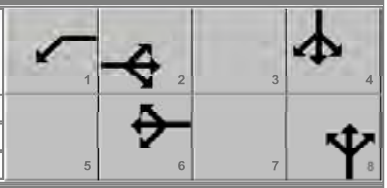
General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	CEC	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & 469th Ave	File Name	(16) SD38&469_PM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	5	245	120	285	380	5	100	5	120	15	5	10

Signal Information			
Cycle, s	60.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	9.1	28.0	8.5	0.0	0.0	0.0
Yellow	3.5	4.0	4.0	0.0	0.0	0.0
Red	1.0	1.0	1.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6		8		4
Case Number		7.3	1.0	4.0		6.0		6.0
Phase Duration, s		33.0	13.6	46.5		13.5		13.5
Change Period, (*Y+R c*), s		5.0	4.5	5.0		5.0		5.0
Max Allow Headway (*MAH*), s		0.0	3.9	0.0		4.1		4.1
Queue Clearance Time (*g s*), s			8.4			7.1		7.9
Green Extension Time (*g e*), s		0.0	0.7	0.0		0.5		0.6
Phase Call Probability			0.99			0.99		0.99
Max Out Probability			0.02			0.25		0.03

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h		272	130	310	210	209	109	136		16	16	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1752	1490	1647	1730	1722	1397	1499		1244	1570	
Queue Service Time (*g s*), s		0.0	3.1	6.4	2.6	2.6	4.4	5.1		0.8	0.5	
Cycle Queue Clearance Time (*g c*), s		5.9	3.1	6.4	2.6	2.6	4.9	5.1		5.9	0.5	
Green Ratio (*g/C*)		0.47	0.47	0.65	0.69	0.69	0.14	0.14		0.14	0.14	
Capacity (*c*), veh/h		877	693	369	1196	1191	305	212		190	222	
Volume-to-Capacity Ratio (*X*)		0.310	0.188	0.839	0.175	0.175	0.356	0.640		0.086	0.073	
Back of Queue (*Q*), ft/ln (95 th percentile)		75.7	34.4	81.4	12.3	12.3	58.9	79.5		9.4	8.2	
Back of Queue (*Q*), veh/ln (95 th percentile)		3.0	1.3	3.1	0.5	0.5	2.3	3.1		0.4	0.3	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00	0.00	0.33	0.00	0.00	0.24	0.00		0.04	0.00	
Uniform Delay (*d 1*), s/veh		10.1	9.4	14.9	3.2	3.2	24.5	24.3		27.1	22.3	
Incremental Delay (*d 2*), s/veh		0.9	0.6	5.1	0.3	0.3	0.7	3.2		0.2	0.1	
Initial Queue Delay (*d 3*), s/veh		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh		11.1	10.0	20.1	3.6	3.6	25.2	27.5		27.3	22.5	
Level of Service (LOS)		B	A	C	A	A	C	C		C	C	
Approach Delay, s/veh / LOS	10.7	B		10.6	B		26.5	C		24.9	C	
Intersection Delay, s/veh / LOS	13.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.88	B	1.84	B	2.11	B	2.11	B
Bicycle LOS Score / LOS	1.15	A	1.09	A	0.89	A	0.54	A

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HCS Two-Way Stop-Control Report

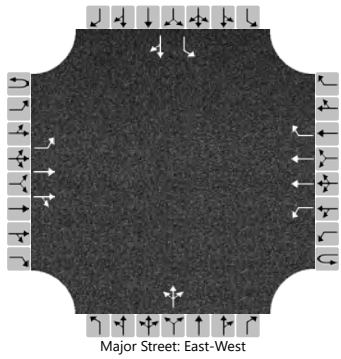
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/29/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38 Build Option 1

Site Information

Intersection	SD 38 & La Mesa
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	La Mesa
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	1		0	1	0		1	1	0
Configuration		L	T	TR		L	T	R			LTR			L		TR
Volume (veh/h)	0	30	700	4	0	0	235	15		0	15	5		75	4	30
Percent Heavy Vehicles (%)	3	0			3	0				0	13	0		0	50	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized						No										
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.10				4.10				7.50	6.76	6.90		7.50	7.50	6.90
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.13	3.30		3.50	4.50	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		33				0					22			82		37
Capacity, c (veh/h)		1303				857					229			287		566
v/c Ratio		0.03				0.00					0.09			0.28		0.07
95% Queue Length, Q_{95} (veh)		0.1				0.0					0.3			1.1		0.2
Control Delay (s/veh)		7.8	0.2			9.2	0.0				22.3			22.5		11.8
Level of Service (LOS)		A	A			A	A				C			C		B
Approach Delay (s/veh)	0.5				0.0				22.3				19.2			
Approach LOS	A				A				C				C			

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HCS Two-Way Stop-Control Report

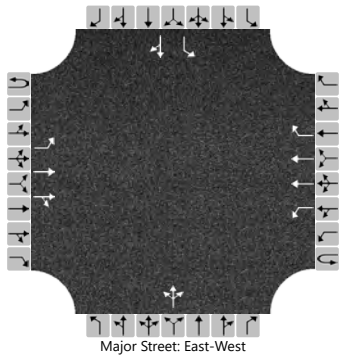
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/29/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38 Option 1

Site Information

Intersection	SD 38 & La Mesa
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	La Mesa
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	1		0	1	0		1	1	0
Configuration		L	T	TR		L	T	R			LTR			L		TR
Volume (veh/h)	0	25	325	0	0	9	735	100		4	5	0		80	15	30
Percent Heavy Vehicles (%)	3	0			3	0				0	0	0		9	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized						No										
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.10				4.10				7.50	6.50	6.90		7.68	6.50	6.90
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.30		3.59	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		27				10					10			87		49
Capacity, c (veh/h)		758				1217					167			158		329
v/c Ratio		0.04				0.01					0.06			0.55		0.15
95% Queue Length, Q_{95} (veh)		0.1				0.0					0.2			2.8		0.5
Control Delay (s/veh)		9.9	0.3			8.0	0.1				27.9			52.4		17.8
Level of Service (LOS)		A	A			A	A				D			F		C
Approach Delay (s/veh)	1.0				0.1				27.9				40.0			
Approach LOS	A				A				D				E			

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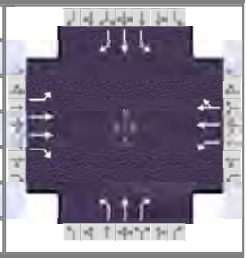
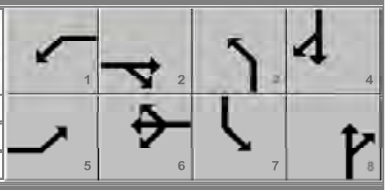
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & Marion Street	File Name	(18) SD38&Marion_AM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	165	340	105	50	125	75	110	225	120	45	145	40

Signal Information										
Cycle, s	50.0	Reference Phase	2							
Offset, s	0	Reference Point	End							
Uncoordinated	No	Simult. Gap E/W	On							
Force Mode	Fixed	Simult. Gap N/S	On							
				Green	2.6	3.9	12.9	2.5	2.0	10.0
				Yellow	4.0	0.0	4.0	4.0	0.0	4.0
				Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	1.1	4.0	2.0	3.0	2.0	3.0
Phase Duration, s	10.6	20.8	6.6	16.9	8.5	16.0	6.5	14.0
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	2.9	0.0	2.9	0.0	2.9	2.9	2.9	2.9
Queue Clearance Time (g_s), s	7.1		3.1		5.6	8.5	3.5	5.9
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.6
Phase Call Probability	0.92		0.53		0.81	1.00	0.49	1.00
Max Out Probability	1.00		0.04		1.00	0.21	1.00	0.15

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	179	370	114	54	112	106	120	245	130	49	158	43
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1701	1674	1525	1714	1772	1556	1647	1674	1502	1554	1758	1466
Queue Service Time (g_s), s	5.1	4.1	2.7	1.1	2.5	2.7	3.6	6.5	3.6	1.5	3.9	1.2
Cycle Queue Clearance Time (g_c), s	5.1	4.1	2.7	1.1	2.5	2.7	3.6	6.5	3.6	1.5	3.9	1.2
Green Ratio (*g/C*)	0.13	0.34	0.34	0.31	0.26	0.26	0.09	0.24	0.24	0.05	0.20	0.20
Capacity (*c*), veh/h	223	1128	514	456	459	403	148	403	361	77	352	293
Volume-to-Capacity Ratio (*X*)	0.804	0.328	0.222	0.119	0.243	0.263	0.806	0.607	0.361	0.638	0.448	0.148
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	4.1	2.2	1.4	0.6	1.6	1.6	3.2	3.5	1.7	1.0	2.3	0.6
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	21.1	12.4	11.9	12.3	14.7	14.7	22.3	16.9	15.8	23.3	17.6	16.5
Incremental Delay (d_2), s/veh	11.0	0.8	1.0	0.0	1.3	1.6	15.9	0.8	0.2	3.3	0.3	0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	32.1	13.1	12.9	12.3	15.9	16.3	38.2	17.7	16.0	26.6	17.9	16.6
Level of Service (LOS)	C	B	B	B	B	B	D	B	B	C	B	B
Approach Delay, s/veh / LOS	18.2	B		15.4	B		22.2	C		19.4	B	
Intersection Delay, s/veh / LOS	19.1						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.08	B	2.09	B	2.26	B	2.42	B
Bicycle LOS Score / LOS	1.03	A	0.71	A	1.30	A	0.90	A

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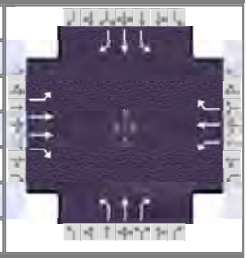
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	PM Peak	PHF	0.90
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 16:45
Intersection	SD 38 & Marion Street	File Name	(18) SD38&Marion_PM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	70	230	105	170	355	55	180	205	125	85	355	205

Signal Information												
Cycle, s	60.0	Reference Phase	2									
Offset, s	0	Reference Point	End	Green	3.7	0.4	13.3	4.2	2.8	15.5		
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	4.0	4.0	4.0	0.0	4.0		
Force Mode	Fixed	Simult. Gap N/S	On	Red	0.0	0.0	0.0	0.0	0.0	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	7.7	17.3	12.2	21.7	11.0	22.3	8.2	19.5
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	2.9	0.0	2.9	0.0	2.9	3.0	2.9	3.0
Queue Clearance Time (g_s), s	5.1		8.5		9.0	8.1	5.3	14.7
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.8
Phase Call Probability	0.73		0.96		0.96	1.00	0.79	1.00
Max Out Probability	0.55		1.00		1.00	0.03	1.00	0.89

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	78	256	117	189	394	61	200	228	139	94	394	228
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1474	1660	1490	1688	1772	1406	1714	1772	1478	1688	1772	1478
Queue Service Time (g_s), s	3.1	3.9	4.0	6.5	12.1	1.9	7.0	6.1	4.3	3.3	12.7	8.1
Cycle Queue Clearance Time (g_c), s	3.1	3.9	4.0	6.5	12.1	1.9	7.0	6.1	4.3	3.3	12.7	8.1
Green Ratio (*g/C*)	0.06	0.22	0.22	0.14	0.30	0.30	0.12	0.31	0.31	0.07	0.26	0.26
Capacity (*c*), veh/h	92	735	330	230	523	415	200	541	451	119	459	383
Volume-to-Capacity Ratio (*X*)	0.845	0.347	0.354	0.822	0.754	0.147	1.000	0.421	0.308	0.797	0.859	0.595
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	2.1	2.5	2.5	6.1	9.1	1.0	10.0	3.6	2.1	2.7	9.5	4.2
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	27.8	19.7	19.7	25.2	19.2	15.6	26.5	16.6	16.0	27.5	21.2	19.5
Incremental Delay (d_2), s/veh	7.7	1.3	3.0	18.3	9.7	0.7	63.6	0.2	0.1	10.2	10.8	0.7
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	35.6	21.0	22.7	43.5	28.9	16.3	90.1	16.8	16.1	37.7	31.9	20.2
Level of Service (LOS)	D	C	C	D	C	B	F	B	B	D	C	C
Approach Delay, s/veh / LOS	23.9	C		32.0	C		42.5	D		29.0	C	
Intersection Delay, s/veh / LOS	32.1						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.10	B	2.10	B	2.26	B	2.27	B
Bicycle LOS Score / LOS	0.86	A	1.55	B	1.42	A	1.67	B

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2023
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD 38 Build	Time Analyzed	AM
Project Description	464th_MickelsonRd_2050_AM	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	55.0	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	638	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	370
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2100
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2100
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.18

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	6.7
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	362	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.66
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	8.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	53.0	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	380	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	244
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2060
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2060
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	2.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	216	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	6.14
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2023
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build	Time Analyzed	PM
Project Description	464th_MickelsonRd_PM	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	55.0	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	441	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	266
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2100
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2100
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.13

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.8
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	251	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.56
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	D

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	8.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	53.0	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	730	Heavy Vehicle Adjustment Factor (f_{HV})	0.990
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	419
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2060
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2060
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.20

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	7.9
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	2.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	415	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.50
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	B

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR GREEN INC	Analysis Year	2050
Jurisdiction	SD 38	Time Analyzed	PM
Project Description	2050 Build Analysis - 468th St to 469th St	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.8	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	410	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	244
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.11

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.8
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.5
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	233	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.42
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	5.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	68.8	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	280	Heavy Vehicle Adjustment Factor (f_{HV})	0.862
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	184
Total Trucks, %	16.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.08

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.8
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	2.7
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	1.3		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	159	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	8.07
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR GREEN INC	Analysis Year	2050
Jurisdiction	SD 38	Time Analyzed	PM
Project Description	2050 Build Analysis - 468th St to 469th St	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.8	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	370	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	225
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.10

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.8
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	210	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	4.05
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	D

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	5.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	68.8	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	490	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	284
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.8
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.1
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	1.3		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	278	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.65
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build	Time Analyzed	AM
Project Description	469th to LaMesa	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	2.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.5	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	610	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	360
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.16

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.5
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	5.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.5		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	347	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.32
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.8	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	240	Heavy Vehicle Adjustment Factor (f_{HV})	0.820
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	166
Total Trucks, %	22.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.07

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.8
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	2.4
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	136	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	11.74
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build	Time Analyzed	PM
Project Description	469th to LaMesa	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	2.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.5	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	351	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	218
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.09

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.5
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.1
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.5		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	199	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	4.80
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	E

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.8	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	666	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	390
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.17

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.8
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	5.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	378	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.07
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR GREEN INC	Analysis Year	2050
Jurisdiction	SD 38	Time Analyzed	AM
Project Description	2050 Build Analysis - 466th Avenue S/EB Exit Ramp to 468th St	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	4.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.0	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	364	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	221
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.10

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	1.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	207	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	4.05
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	D

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	2.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.5	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	260	Heavy Vehicle Adjustment Factor (f_{HV})	0.901
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	164
Total Trucks, %	11.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.07

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.5
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	2.4
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.5		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	148	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	5.50
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	E

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR GREEN INC	Analysis Year	2050
Jurisdiction	SD 38	Time Analyzed	PM
Project Description	2050 Build Analysis - 466th Avenue S/EB Exit Ramp to 468th St	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	4.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.0	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	312	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	195
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.08

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	2.8
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	1.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	177	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	5.16
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	E

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	2.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.5	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	420	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	255
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.11

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.5
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.7
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.5		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	239	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	4.12
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	D

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build	Time Analyzed	AM
Project Description	I90 WB Ramps to I90 EB Ramps	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	745	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	436
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.19

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	6.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	423	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.13
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	273	Heavy Vehicle Adjustment Factor (f_{HV})	0.877
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	177
Total Trucks, %	14.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.08

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	2.5
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	155	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	6.98
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build	Time Analyzed	PM
Project Description	I90 WB Ramps to I90 EB Ramps	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	451	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	280
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	256	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	4.92
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	E

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	455	Heavy Vehicle Adjustment Factor (f_{HV})	0.877
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	295
Total Trucks, %	14.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.13

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	259	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	7.24
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build	Time Analyzed	AM
Project Description	Mickelson Rd to 466th St	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.5
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.6	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	725	Heavy Vehicle Adjustment Factor (f_{HV})	0.990
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	416
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.18

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	6.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.4		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	412	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.61
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	2.2
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.5	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	425	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	273
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.4
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.9
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.6		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	241	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	6.70
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build	Time Analyzed	PM
Project Description	Mickelson Rd to 466th St	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.5
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.6	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	445	Heavy Vehicle Adjustment Factor (f_{HV})	0.901
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	280
Total Trucks, %	11.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.4		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	253	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	5.78
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	2.2
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.5	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	913	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	530
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.23

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.4
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	7.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.6		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	519	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.97
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build	Time Analyzed	AM
Project Description	466th St to I90 WB Ramps	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	769	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	446
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.19

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	6.4
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	437	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.88
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	436	Heavy Vehicle Adjustment Factor (f_{HV})	0.833
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	298
Total Trucks, %	20.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.13

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.3
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	248	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	10.71
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build	Time Analyzed	PM
Project Description	466th St to I90 WB Ramps	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	450	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	279
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	256	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	4.92
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	E

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	TWLTL	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	910	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	532
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.23

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	7.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	517	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.23
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2050 NB
Jurisdiction	SDDOT	Time Analyzed	AM Peak
Project Description	West of Hartford SD 38 EB	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1069
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	169
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30713	Speed Power Coefficient (p)	0.54838
PF Slope Coefficient (m)	-1.23090	PF Power Coefficient (p)	0.80942
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1069	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	32.4
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	664
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	664	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	35.8
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1871
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	169
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.31694	Speed Power Coefficient (p)	0.54838
PF Slope Coefficient (m)	-1.20586	PF Power Coefficient (p)	0.82063
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1871	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	31.5
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	925
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	925	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	35.8
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4476
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	169
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35043	Speed Power Coefficient (p)	0.54838
PF Slope Coefficient (m)	-1.15155	PF Power Coefficient (p)	0.84082
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4476	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	29.6
Segment Travel Time, minutes	0.74	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	896
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	896	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	35.8
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	743
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	169
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30713	Speed Power Coefficient (p)	0.54838
PF Slope Coefficient (m)	-1.23090	PF Power Coefficient (p)	0.80942
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	743	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	32.4
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2717
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	245	Opposing Demand Flow Rate, veh/h	165
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32768	Speed Power Coefficient (p)	0.54983
PF Slope Coefficient (m)	-1.17918	PF Power Coefficient (p)	0.83165
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2717	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	30.7
Segment Travel Time, minutes	0.45	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	245	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.93	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1013
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	245	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29345	PF Power Coefficient (p)	0.75792
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1013	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	36.0
Segment Travel Time, minutes	0.17	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	245	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.93	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4569
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	245	Opposing Demand Flow Rate, veh/h	165
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34958	Speed Power Coefficient (p)	0.54983
PF Slope Coefficient (m)	-1.14981	PF Power Coefficient (p)	0.84100
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	4569	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	29.7
Segment Travel Time, minutes	0.76	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	245	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.93	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5676
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	244	Opposing Demand Flow Rate, veh/h	165
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36055	Speed Power Coefficient (p)	0.54983
PF Slope Coefficient (m)	-1.14222	PF Power Coefficient (p)	0.84066
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5676	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	29.5
Segment Travel Time, minutes	0.94	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	244	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 12

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	657
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	244	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29350	PF Power Coefficient (p)	0.75785
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	657	-	-	68.0

Vehicle Results			
Average Speed, mi/h	68.0	Percent Followers, %	35.9
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	244	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 13

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	6009
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	244	Opposing Demand Flow Rate, veh/h	165
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36364	Speed Power Coefficient (p)	0.54983
PF Slope Coefficient (m)	-1.14089	PF Power Coefficient (p)	0.83997

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6009	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	29.5
Segment Travel Time, minutes	1.00	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	244	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	891
Measured FFS	Measured	Free-Flow Speed, mi/h	50.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	244	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	50.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.47375	PF Power Coefficient (p)	0.71164
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	891	-	-	48.0

Vehicle Results

Average Speed, mi/h	48.0	Percent Followers, %	41.8
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	2.1
Vehicle LOS	B		

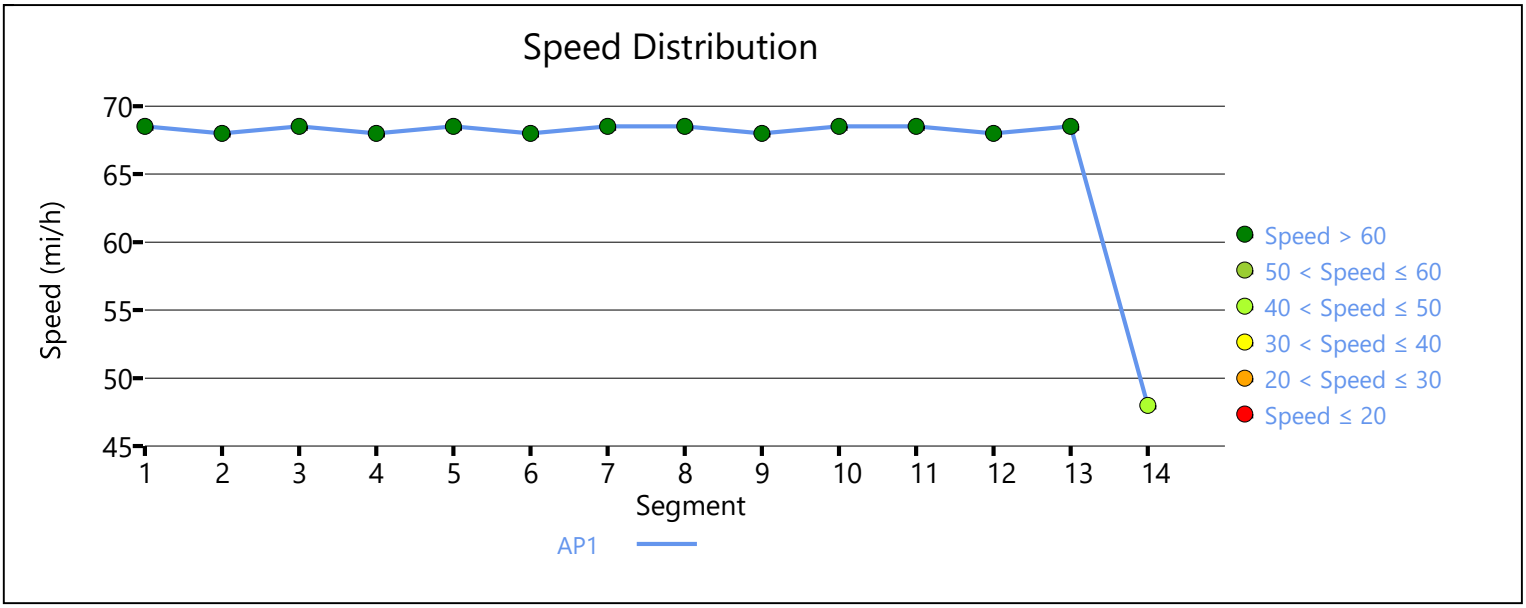
Bicycle Results

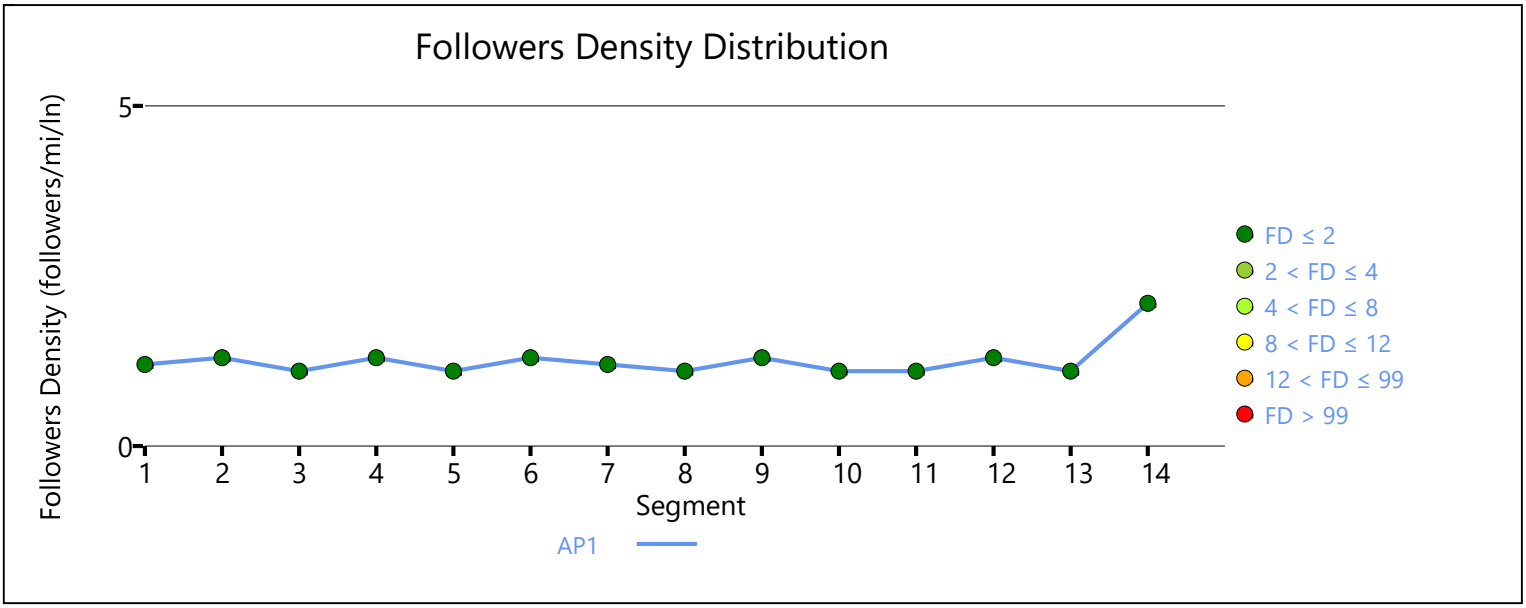
Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	244	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.59	Bicycle Effective Speed Factor	4.42
Bicycle LOS	C		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	327	0.11	1.1	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2050 NB
Jurisdiction	SDDOT	Time Analyzed	PM Peak
Project Description	West of Hartford SD 38 EB	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1069
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	286
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34767	Speed Power Coefficient (p)	0.51808
PF Slope Coefficient (m)	-1.25475	PF Power Coefficient (p)	0.80124
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1069	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	24.8
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	664
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	664	-	-	68.6

Vehicle Results			
Average Speed, mi/h	68.6	Percent Followers, %	27.2
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 3

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	1871
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	286
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35747	Speed Power Coefficient (p)	0.51808
PF Slope Coefficient (m)	-1.22915	PF Power Coefficient (p)	0.81213
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1871	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.9
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	925
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	925	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.2
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4476
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	286
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39096	Speed Power Coefficient (p)	0.51808
PF Slope Coefficient (m)	-1.17364	PF Power Coefficient (p)	0.83159
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4476	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	22.2
Segment Travel Time, minutes	0.74	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	896
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	896	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.2
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	743
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	286
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34767	Speed Power Coefficient (p)	0.51808
PF Slope Coefficient (m)	-1.25475	PF Power Coefficient (p)	0.80124
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	743	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	24.8
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 8

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	2717
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	289
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.37072	Speed Power Coefficient (p)	0.51760
PF Slope Coefficient (m)	-1.20338	PF Power Coefficient (p)	0.82225
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2717	-	-	68.9

Vehicle Results			
Average Speed, mi/h	68.9	Percent Followers, %	23.8
Segment Travel Time, minutes	0.45	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.40	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 9

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1013
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29345	PF Power Coefficient (p)	0.75792
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1013	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.0
Segment Travel Time, minutes	0.17	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.40	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4569
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	289
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39263	Speed Power Coefficient (p)	0.51760
PF Slope Coefficient (m)	-1.17332	PF Power Coefficient (p)	0.83118
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	4569	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	22.9
Segment Travel Time, minutes	0.75	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.40	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5676
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	280
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.40080	Speed Power Coefficient (p)	0.51956
PF Slope Coefficient (m)	-1.16417	PF Power Coefficient (p)	0.83135
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5676	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	22.8
Segment Travel Time, minutes	0.94	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.28	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 12

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	657
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29350	PF Power Coefficient (p)	0.75785
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	657	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.0
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.28	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 13

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	6009
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	280
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.40389	Speed Power Coefficient (p)	0.51956
PF Slope Coefficient (m)	-1.16281	PF Power Coefficient (p)	0.83065

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6009	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	22.8
Segment Travel Time, minutes	0.99	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.28	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	891
Measured FFS	Measured	Free-Flow Speed, mi/h	50.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	50.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.47375	PF Power Coefficient (p)	0.71164
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	891	-	-	48.5

Vehicle Results

Average Speed, mi/h	48.5	Percent Followers, %	33.4
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

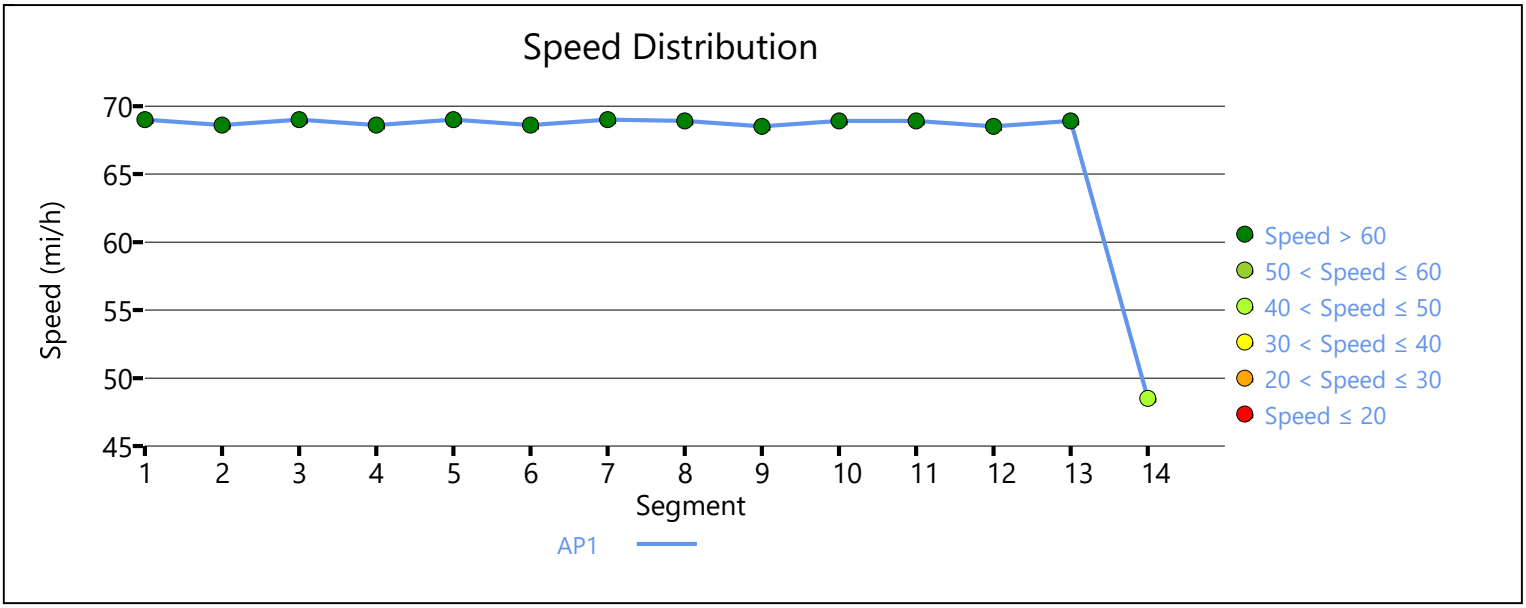
Bicycle Results

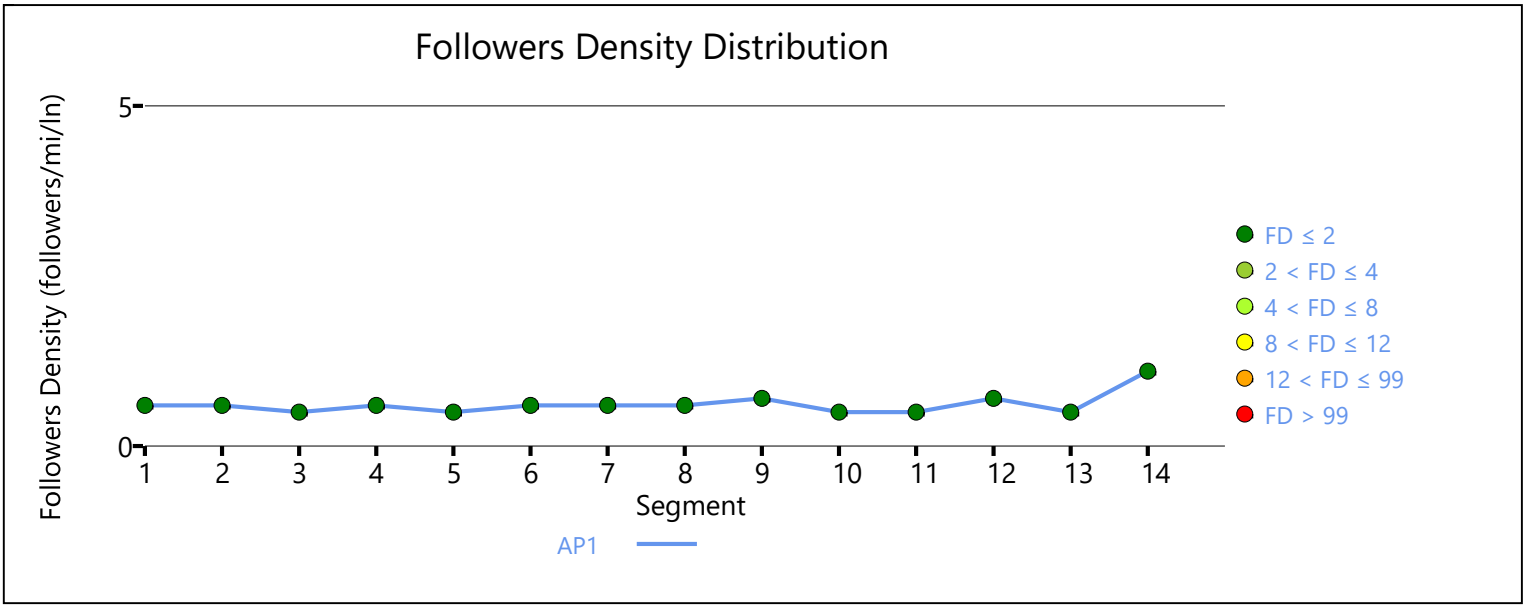
Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.06	Bicycle Effective Speed Factor	4.42
Bicycle LOS	A		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	216	0.05	0.6	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2050 NB
Jurisdiction	SDDOT	Time Analyzed	AM Peak
Project Description	WB 38 West of Hartford	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	10549
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	244
Peak Hour Factor	0.88	Total Trucks, %	12.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.42827	Speed Power Coefficient (p)	0.52768
PF Slope Coefficient (m)	-1.16689	PF Power Coefficient (p)	0.80729
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	10549	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.8
Segment Travel Time, minutes	1.74	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	4.94	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2793
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	244
Peak Hour Factor	0.88	Total Trucks, %	12.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35767	Speed Power Coefficient (p)	0.52768
PF Slope Coefficient (m)	-1.19319	PF Power Coefficient (p)	0.82737
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2793	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.5
Segment Travel Time, minutes	0.46	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	4.94	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3825
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	245
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.37079	Speed Power Coefficient (p)	0.52741
PF Slope Coefficient (m)	-1.17529	PF Power Coefficient (p)	0.83222
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3825	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.1
Segment Travel Time, minutes	0.63	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	791
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29355	PF Power Coefficient (p)	0.75779
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	791	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.1
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3414
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	245
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36595	Speed Power Coefficient (p)	0.52741
PF Slope Coefficient (m)	-1.18179	PF Power Coefficient (p)	0.83026
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3414	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.2
Segment Travel Time, minutes	0.56	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	286
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29355	PF Power Coefficient (p)	0.75779
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	286	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.1
Segment Travel Time, minutes	0.05	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	463
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29353	PF Power Coefficient (p)	0.75782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	463	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.6
Segment Travel Time, minutes	0.08	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4822
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	243
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.38079	Speed Power Coefficient (p)	0.52796
PF Slope Coefficient (m)	-1.16377	PF Power Coefficient (p)	0.83451
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4822	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	23.2
Segment Travel Time, minutes	0.79	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	861
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29353	PF Power Coefficient (p)	0.75782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	861	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.6
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1556
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	243
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33831	Speed Power Coefficient (p)	0.52796
PF Slope Coefficient (m)	-1.23554	PF Power Coefficient (p)	0.80871
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1556	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	25.5
Segment Travel Time, minutes	0.26	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	799
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29353	PF Power Coefficient (p)	0.75782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	799	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.6
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 12

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	857
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	243
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33390	Speed Power Coefficient (p)	0.52796
PF Slope Coefficient (m)	-1.24754	PF Power Coefficient (p)	0.80350
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	857	-	-	68.9

Vehicle Results			
Average Speed, mi/h	68.9	Percent Followers, %	25.9
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 13

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1288
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39677	PF Power Coefficient (p)	0.73640

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1288	-	-	58.5

Vehicle Results

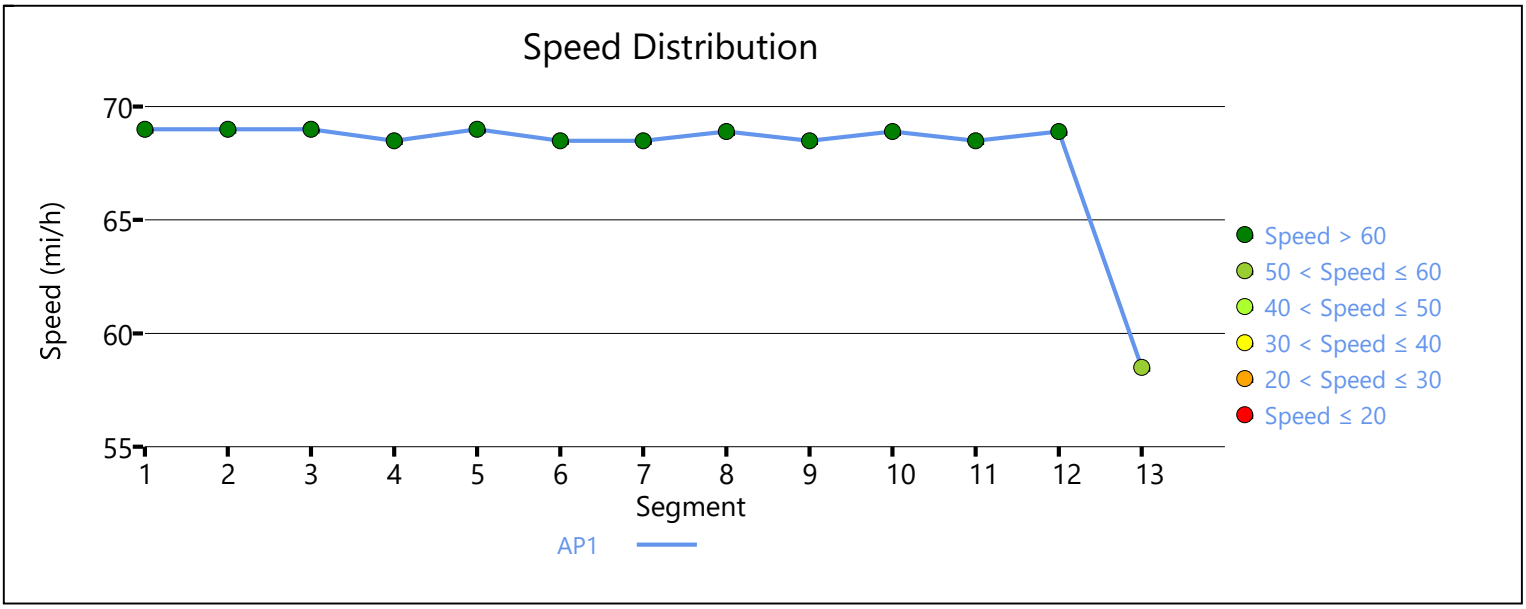
Average Speed, mi/h	58.5	Percent Followers, %	31.5
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	0.9
Vehicle LOS	A		

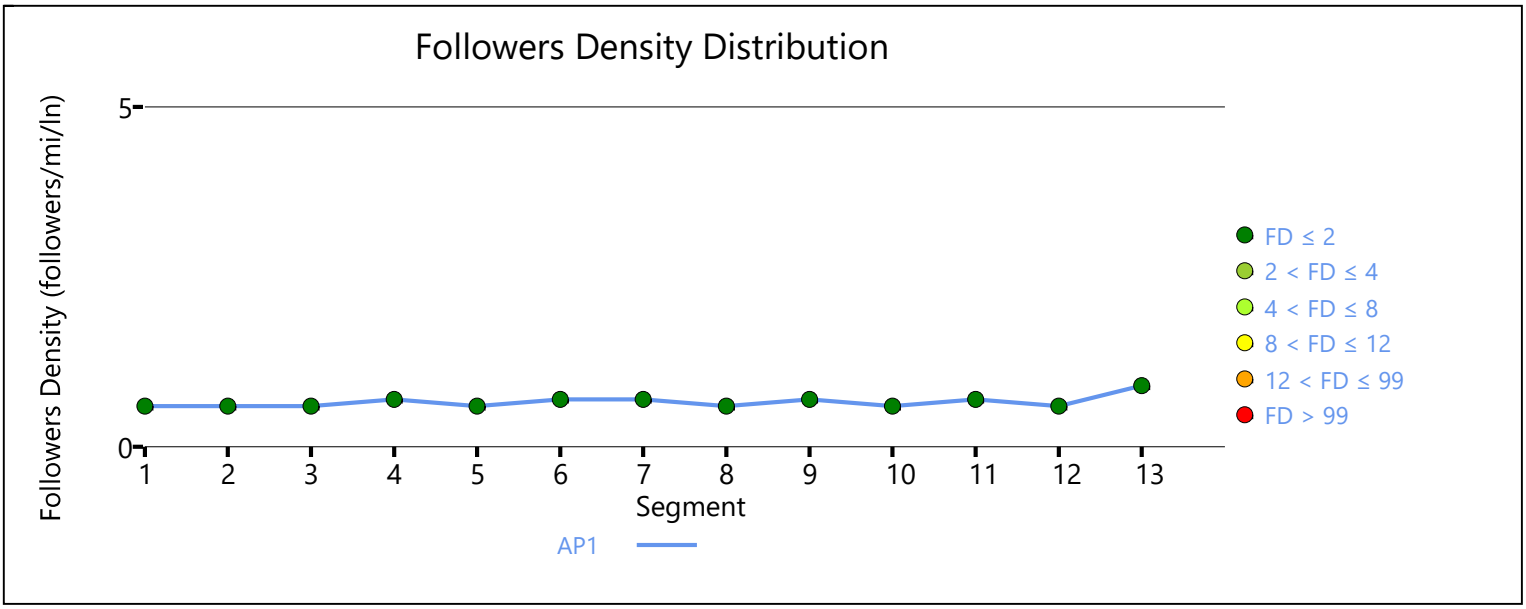
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.14	Bicycle Effective Speed Factor	4.79
Bicycle LOS	A		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	224	0.05	0.6	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2050 NB
Jurisdiction	SDDOT	Time Analyzed	PM Peak
Project Description	WB 38 West of Hartford	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	10549
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	280	Opposing Demand Flow Rate, veh/h	164
Peak Hour Factor	0.88	Total Trucks, %	1.94
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39885	Speed Power Coefficient (p)	0.55020
PF Slope Coefficient (m)	-1.15143	PF Power Coefficient (p)	0.81244
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	10549	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	33.6
Segment Travel Time, minutes	1.76	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	280	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.64	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2793
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	280	Opposing Demand Flow Rate, veh/h	164
Peak Hour Factor	0.88	Total Trucks, %	1.94
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32824	Speed Power Coefficient (p)	0.55020
PF Slope Coefficient (m)	-1.17723	PF Power Coefficient (p)	0.83227
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2793	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	33.5
Segment Travel Time, minutes	0.46	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	280	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.64	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3825
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	289	Opposing Demand Flow Rate, veh/h	164
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34098	Speed Power Coefficient (p)	0.55020
PF Slope Coefficient (m)	-1.15833	PF Power Coefficient (p)	0.83897
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3825	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	33.5
Segment Travel Time, minutes	0.64	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	289	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	791
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	289	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29358	PF Power Coefficient (p)	0.75776
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	791	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.6
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	289	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3414
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	289	Opposing Demand Flow Rate, veh/h	164
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33614	Speed Power Coefficient (p)	0.55020
PF Slope Coefficient (m)	-1.16472	PF Power Coefficient (p)	0.83695
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3414	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	33.7
Segment Travel Time, minutes	0.57	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	289	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	286
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	289	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29358	PF Power Coefficient (p)	0.75776
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	286	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.6
Segment Travel Time, minutes	0.05	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	289	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	463
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29347	PF Power Coefficient (p)	0.75789
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	463	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.4
Segment Travel Time, minutes	0.08	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 8

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	4822
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	157
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34895	Speed Power Coefficient (p)	0.55243
PF Slope Coefficient (m)	-1.14563	PF Power Coefficient (p)	0.84199
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4822	-	-	68.3

Vehicle Results			
Average Speed, mi/h	68.3	Percent Followers, %	33.0
Segment Travel Time, minutes	0.80	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 9

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	861
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29347	PF Power Coefficient (p)	0.75789
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	861	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.4
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1556
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	157
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30647	Speed Power Coefficient (p)	0.55243
PF Slope Coefficient (m)	-1.21611	PF Power Coefficient (p)	0.81541
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1556	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	35.5
Segment Travel Time, minutes	0.26	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	799
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29347	PF Power Coefficient (p)	0.75789
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	799	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.4
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 12

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	857
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	157
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30206	Speed Power Coefficient (p)	0.55243
PF Slope Coefficient (m)	-1.22789	PF Power Coefficient (p)	0.81007
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	857	-	-	68.3

Vehicle Results			
Average Speed, mi/h	68.3	Percent Followers, %	36.0
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 13

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1288
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39671	PF Power Coefficient (p)	0.73647

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1288	-	-	57.7

Vehicle Results

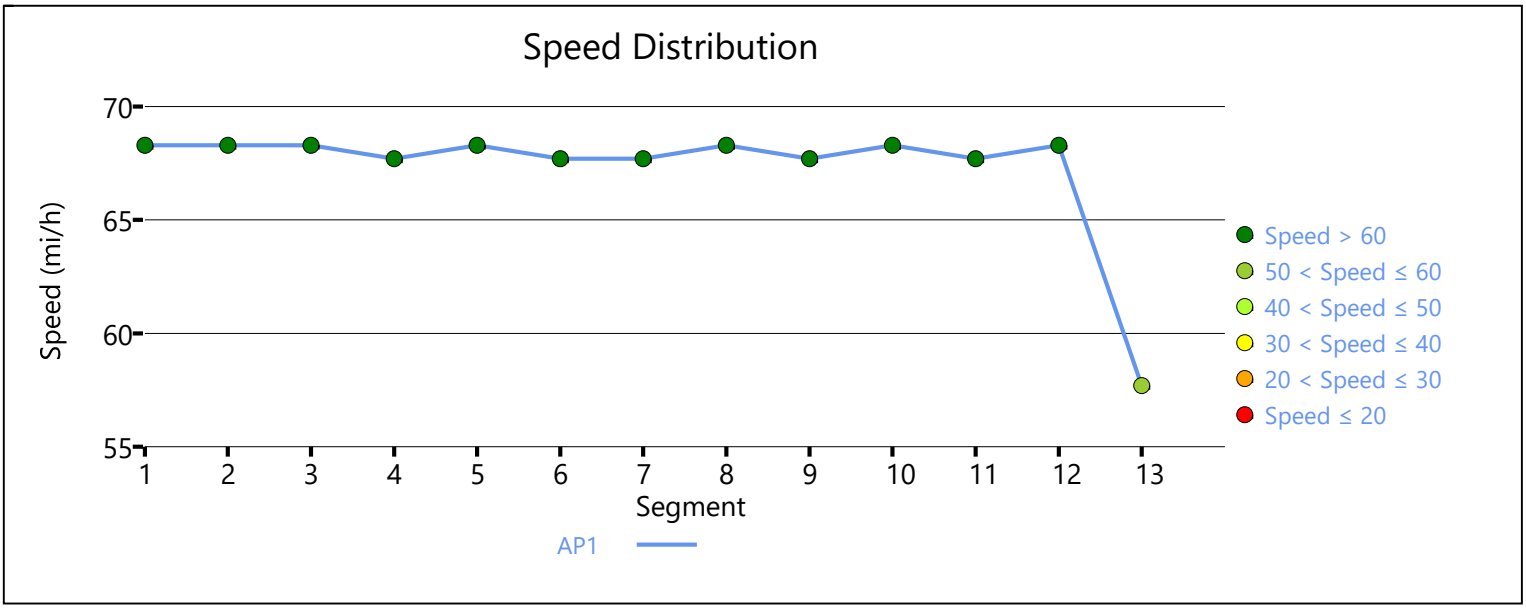
Average Speed, mi/h	57.7	Percent Followers, %	42.7
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	2.1
Vehicle LOS	B		

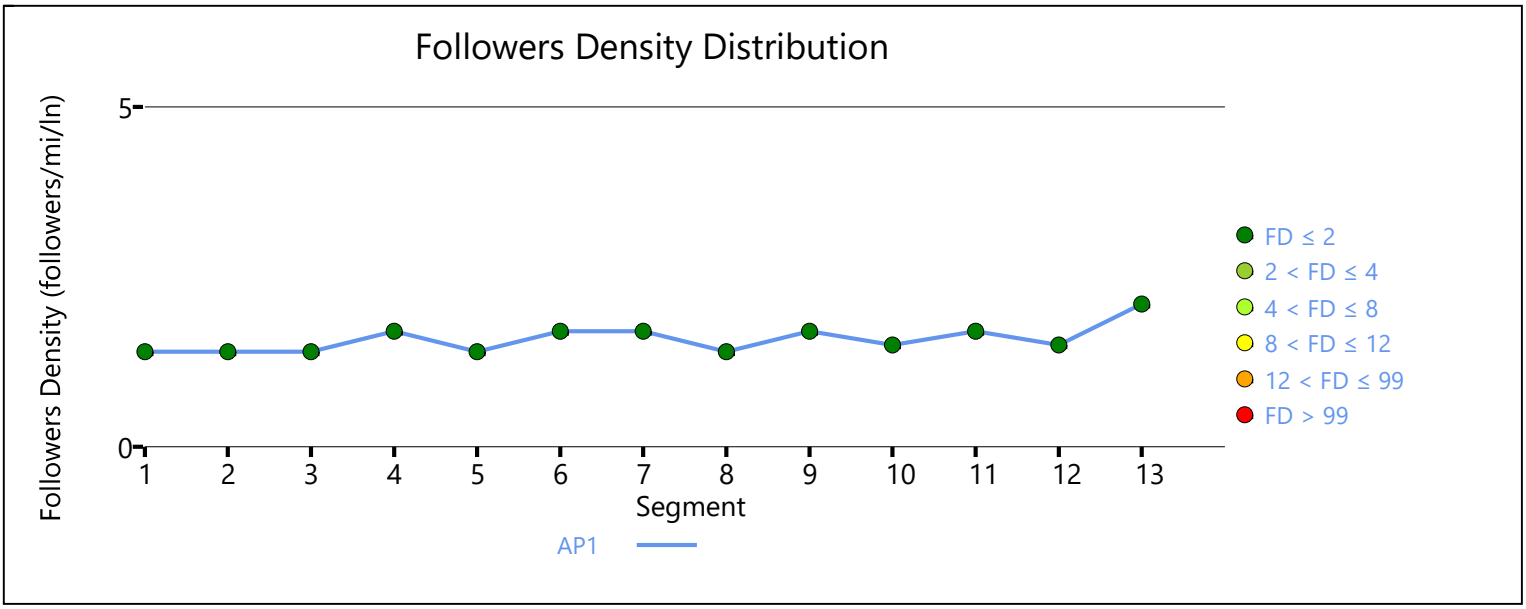
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.86	Bicycle Effective Speed Factor	4.79
Bicycle LOS	C		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	382	0.15	1.5	A





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HCS Two-Way Stop-Control Report

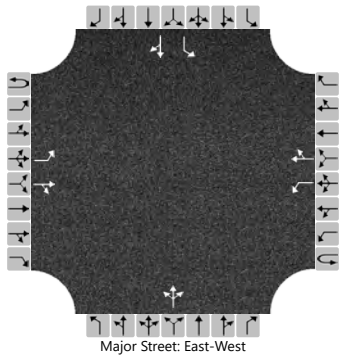
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & SD 19
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	SD 19
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		1	1	0
Configuration		L		TR		L		TR			LTR			L		TR
Volume (veh/h)		55	165	0		0	120	50		10	5	10		70	0	95
Percent Heavy Vehicles (%)		30				3				3	3	3		9	3	11
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.40				4.13				7.13	6.53	6.23		7.19	6.53	6.31
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.47				2.23				3.53	4.03	3.33		3.58	4.03	3.40

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		60				0					27			76		103
Capacity, c (veh/h)		1238				1390					524			461		865
v/c Ratio		0.05				0.00					0.05			0.16		0.12
95% Queue Length, Q_{95} (veh)		0.2				0.0					0.2			0.6		0.4
Control Delay (s/veh)		8.1	0.2	0.2		7.6	0.0	0.0			12.2			14.3		9.7
Level of Service (LOS)		A	A	A		A	A	A			B			B		A
Approach Delay (s/veh)	2.2				0.0				12.2				11.7			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

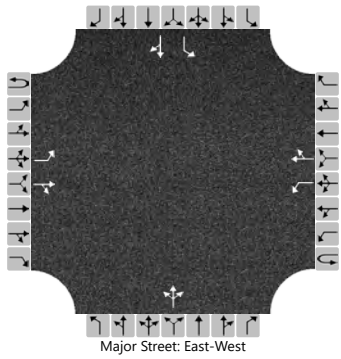
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & SD 19
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	SD 19
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		1	1	0
Configuration		L		TR		L		TR			LTR			L		TR
Volume (veh/h)		85	115	0		0	170	80		10	5	10		40	0	50
Percent Heavy Vehicles (%)		2				3				3	3	3		10	3	14
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.12				4.13				7.13	6.53	6.23		7.20	6.53	6.34
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.23				3.53	4.03	3.33		3.59	4.03	3.43

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		92				0					27			43		54
Capacity, c (veh/h)		1291				1455					498			395		782
v/c Ratio		0.07				0.00					0.05			0.11		0.07
95% Queue Length, Q_{95} (veh)		0.2				0.0					0.2			0.4		0.2
Control Delay (s/veh)		8.0	0.2	0.2		7.5	0.0	0.0			12.6			15.2		9.9
Level of Service (LOS)		A	A	A		A	A	A			B			C		A
Approach Delay (s/veh)		3.5				0.0				12.6				12.3		
Approach LOS		A				A				B				B		

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HCS Two-Way Stop-Control Report

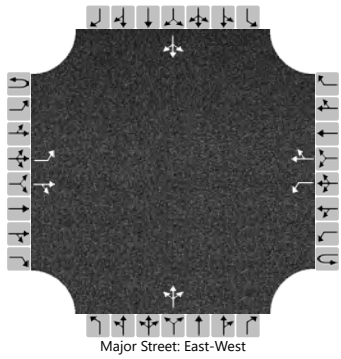
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 459th
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	459th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		0	215	7		2	155	0		15	0	7		9	0	0
Percent Heavy Vehicles (%)		3				3				13	0	0		0	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.23	6.50	6.20		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.62	4.00	3.30		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				2					24				10	
Capacity, c (veh/h)		1403				1319					596				546	
v/c Ratio		0.00				0.00					0.04				0.02	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.1				0.1	
Control Delay (s/veh)		7.6	0.0	0.0		7.7	0.0	0.0			11.3				11.7	
Level of Service (LOS)		A	A	A		A	A	A			B				B	
Approach Delay (s/veh)	0.0				0.1				11.3				11.7			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

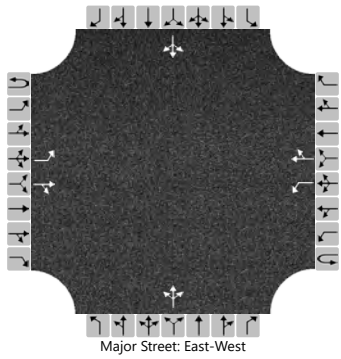
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 459th
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	459th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		0	145	9		15	245	2		15	0	4		2	2	0
Percent Heavy Vehicles (%)		0				0				13	0	0		0	100	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.23	6.50	6.20		7.10	7.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.62	4.00	3.30		3.50	4.90	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				16					21				4	
Capacity, c (veh/h)		1307				1423					534				427	
v/c Ratio		0.00				0.01					0.04				0.01	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.1				0.0	
Control Delay (s/veh)		7.8	0.0	0.0		7.6	0.1	0.1			12.0				13.5	
Level of Service (LOS)		A	A	A		A	A	A			B				B	
Approach Delay (s/veh)	0.0				0.5				12.0				13.5			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

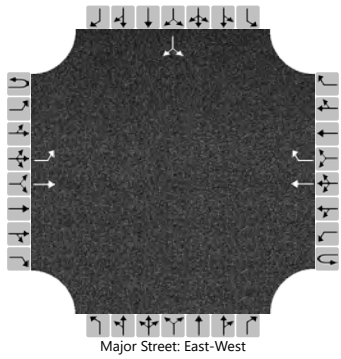
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 Speedway
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 Expressway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		L	T				T	R							LR	
Volume (veh/h)		0	230				165	0						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized						No										
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													0	
Capacity, c (veh/h)		1390													0	
v/c Ratio		0.00														
95% Queue Length, Q_{95} (veh)		0.0														
Control Delay (s/veh)		7.6	0.0													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)		0.0														
Approach LOS		A														

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HCS Two-Way Stop-Control Report

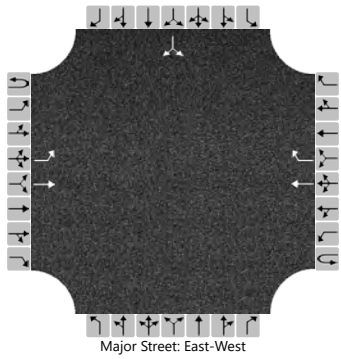
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak - Event Traffic
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 Speedway
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 Expressway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		L	T				T	R							LR	
Volume (veh/h)		0	412				295	0						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized						No										
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													0	
Capacity, c (veh/h)		1234													0	
v/c Ratio		0.00														
95% Queue Length, Q_{95} (veh)		0.0														
Control Delay (s/veh)		7.9	0.0													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)		0.0														
Approach LOS		A														

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HCS Two-Way Stop-Control Report

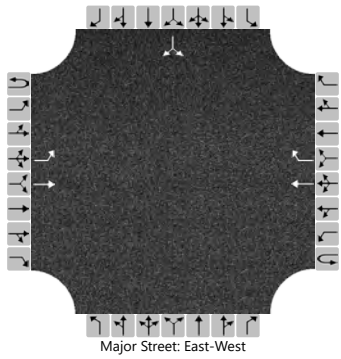
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 Speedway
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 Expressway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		L	T				T	R							LR	
Volume (veh/h)		0	165				260	0						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized						No										
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													0	
Capacity, c (veh/h)		1274													0	
v/c Ratio		0.00														
95% Queue Length, Q_{95} (veh)		0.0														
Control Delay (s/veh)		7.8	0.0													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)		0.0														
Approach LOS		A														

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HCS Two-Way Stop-Control Report

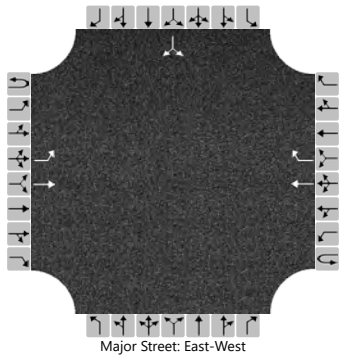
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak - Event Traffic
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 Speedway
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 Expressway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		L	T				T	R							LR	
Volume (veh/h)		0	295				465	0						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													0	
Capacity, c (veh/h)		1054													0	
v/c Ratio		0.00														
95% Queue Length, Q_{95} (veh)		0.0														
Control Delay (s/veh)		8.4	0.0													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)		0.0														
Approach LOS		A														

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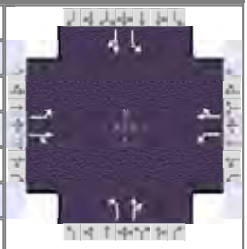
HCS Signalized Intersection Results Summary

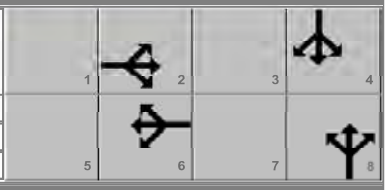
General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	CEC	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & Western Ave	File Name	(4) SD38&463WesternAve_AM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	9	180	80	60	110	30	65	75	90	40	80	5

Signal Information			
Cycle, s	50.0	Reference Phase	6
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	30.3	9.7	0.0	0.0	0.0	0.0	
Yellow	4.0	4.0	0.0	0.0	0.0	0.0	
Red	1.0	1.0	0.0	0.0	0.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		6.0		6.0		6.0
Phase Duration, s		35.3		35.3		14.7		14.7
Change Period, ($Y+R_c$), s		5.0		5.0		5.0		5.0
Max Allow Headway (*MAH*), s		0.0		0.0		4.3		4.3
Queue Clearance Time (g_s), s						7.0		8.7
Green Extension Time (g_e), s		0.0		0.0		1.2		1.1
Phase Call Probability						1.00		1.00
Max Out Probability						0.03		0.07

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	10	283		65	152		71	179		43	92	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1225	1666		1088	1693		1180	1614		1205	1684	
Queue Service Time (g_s), s	0.2	4.0		1.5	2.0		2.7	5.0		1.7	2.3	
Cycle Queue Clearance Time (g_c), s	2.2	4.0		5.6	2.0		5.0	5.0		6.7	2.3	
Green Ratio (*g/C*)	0.61	0.61		0.61	0.61		0.19	0.19		0.19	0.19	
Capacity (*c*), veh/h	836	1007		713	1023		320	315		259	329	
Volume-to-Capacity Ratio (*X*)	0.012	0.281		0.092	0.149		0.220	0.569		0.168	0.281	
Back of Queue (*Q*), ft/ln (95 th percentile)	1.6	46.2		13.6	22.3		34.3	80.9		20.5	39.4	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.1	1.8		0.5	0.9		1.2	3.2		0.8	1.5	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.01	0.00		0.05	0.00		0.14	0.00		0.08	0.00	
Uniform Delay (d_1), s/veh	4.8	4.7		6.1	4.3		19.2	18.2		21.2	17.1	
Incremental Delay (d_2), s/veh	0.0	0.7		0.3	0.3		0.3	1.6		0.3	0.5	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	4.8	5.4		6.3	4.6		19.6	19.8		21.5	17.6	
Level of Service (LOS)	A	A		A	A		B	B		C	B	
Approach Delay, s/veh / LOS	5.4	A		5.1	A		19.7	B		18.8	B	
Intersection Delay, s/veh / LOS	11.4						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.85	B	1.85	B	1.91	B	1.91	B
Bicycle LOS Score / LOS	0.97	A	0.85	A	0.90	A	0.71	A

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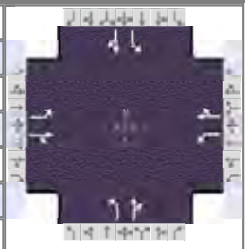
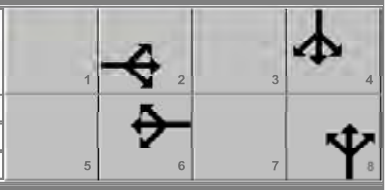
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	CEC	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	PM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & Western Ave	File Name	(4) SD38&463WesternAve_PM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	15	125	55	120	200	60	70	85	155	55	100	25

Signal Information												
Cycle, s	50.0	Reference Phase	6									
Offset, s	0	Reference Point	End	Green	26.5	13.5	0.0	0.0	0.0	0.0		
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	4.0	0.0	0.0	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	1.0	0.0	0.0	0.0	0.0		



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		6.0		6.0		6.0		6.0
Phase Duration, s		31.5		31.5		18.5		18.5
Change Period, ($Y+R_c$), s		5.0		5.0		5.0		5.0
Max Allow Headway (*MAH*), s		0.0		0.0		4.3		4.3
Queue Clearance Time (g_s), s						9.8		12.3
Green Extension Time (g_e), s		0.0		0.0		1.5		1.2
Phase Call Probability						1.00		1.00
Max Out Probability						0.18		0.43

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	16	196		130	283		76	261		60	136	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	923	1680		1178	1701		1253	1474		1119	1683	
Queue Service Time (g_s), s	0.5	3.1		3.3	4.7		2.6	7.8		2.5	3.2	
Cycle Queue Clearance Time (g_c), s	5.3	3.1		6.5	4.7		5.7	7.8		10.3	3.2	
Green Ratio (*g/C*)	0.53	0.53		0.53	0.53		0.27	0.27		0.27	0.27	
Capacity (*c*), veh/h	545	889		693	901		404	399		272	455	
Volume-to-Capacity Ratio (*X*)	0.030	0.220		0.188	0.314		0.188	0.654		0.219	0.298	
Back of Queue (*Q*), ft/ln (95 th percentile)	5	41.2		34.4	63.5		30.4	118.8		27.9	50.3	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.2	1.6		1.3	2.5		1.2	4.4		1.1	2.0	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.02	0.00		0.14	0.00		0.12	0.00		0.11	0.00	
Uniform Delay (d_1), s/veh	8.1	6.3		8.0	6.6		16.7	16.2		20.7	14.5	
Incremental Delay (d_2), s/veh	0.1	0.6		0.6	0.9		0.2	1.8		0.4	0.4	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	8.2	6.8		8.6	7.5		16.9	18.0		21.1	14.8	
Level of Service (LOS)	A	A		A	A		B	B		C	B	
Approach Delay, s/veh / LOS	6.9	A		7.9	A		17.8	B		16.8	B	
Intersection Delay, s/veh / LOS	12.1						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.87	B	1.87	B	1.90	B	1.90	B
Bicycle LOS Score / LOS	0.84	A	1.17	A	1.04	A	0.81	A

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HCS Two-Way Stop-Control Report

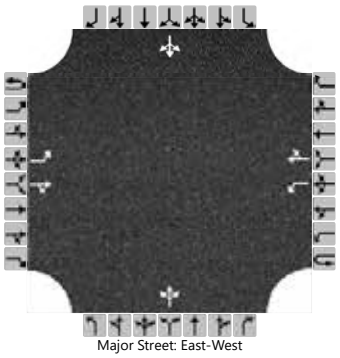
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Main Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Main Ave (9th St)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		2	260	30		40	195	20		40	5	85		6	10	4
Percent Heavy Vehicles (%)		0				11				5	0	2		0	17	0
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type | Storage	Left Only								9							

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.21				7.15	6.50	6.22		7.10	6.67	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.30				3.55	4.00	3.32		3.50	4.15	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2				43					141				22	
Capacity, c (veh/h)		1346				1196					678				459	
v/c Ratio		0.00				0.04					0.21				0.05	
95% Queue Length, Q_{95} (veh)		0.0				0.1					0.8				0.1	
Control Delay (s/veh)		7.7				8.1					11.7				13.2	
Level of Service (LOS)		A				A					B				B	
Approach Delay (s/veh)	0.1				1.3				11.7				13.2			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

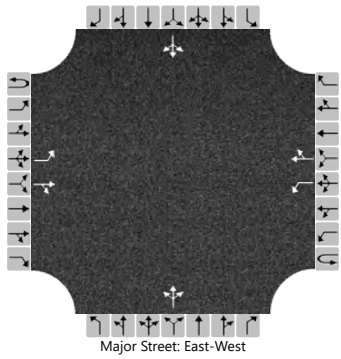
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Main Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Main Ave (9th St)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		10	250	45		65	335	60		35	20	55		40	30	7
Percent Heavy Vehicles (%)		0				0				5	0	0		0	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Left Only								9						

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.15	6.50	6.20		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.55	4.00	3.30		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11				71					120				84	
Capacity, c (veh/h)		1141				1251					467				368	
v/c Ratio		0.01				0.06					0.26				0.23	
95% Queue Length, Q_{95} (veh)		0.0				0.2					1.0				0.9	
Control Delay (s/veh)		8.2				8.1					15.3				17.6	
Level of Service (LOS)		A				A					C				C	
Approach Delay (s/veh)	0.3				1.1				15.3				17.6			
Approach LOS	A				A				C				C			

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HCS Two-Way Stop-Control Report

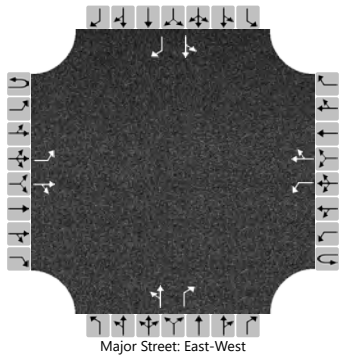
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Vandemark Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Vandemark Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	1		0	1	1
Configuration		L		TR		L		TR		LT		R		LT		R
Volume (veh/h)		25	370	10		8	240	25		9	5	10		40	2	25
Percent Heavy Vehicles (%)		0				0				40	0	0		0	0	7
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized										No				No		
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.50	6.50	6.20		7.10	6.50	6.27
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.86	4.00	3.30		3.50	4.00	3.36

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		27				9				15		11		46		27
Capacity, c (veh/h)		1286				1157				278		648		306		752
v/c Ratio		0.02				0.01				0.05		0.02		0.15		0.04
95% Queue Length, Q_{95} (veh)		0.1				0.0				0.2		0.1		0.5		0.1
Control Delay (s/veh)		7.9	0.1	0.1		8.1	0.1	0.1		18.7		10.7		18.8		10.0
Level of Service (LOS)		A	A	A		A	A	A		C		B		C		A
Approach Delay (s/veh)		0.6				0.3				15.4				15.5		
Approach LOS		A				A				C				C		

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HCS Two-Way Stop-Control Report

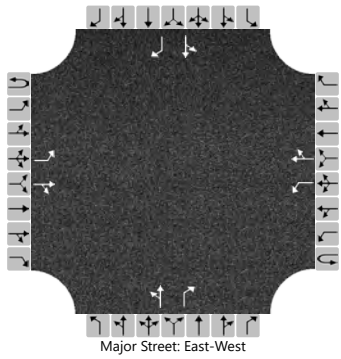
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Vandemark Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Vandemark Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	1		0	1	1
Configuration		L		TR		L		TR		LT		R		LT		R
Volume (veh/h)		20	255	4		5	475	45		0	0	9		30	0	25
Percent Heavy Vehicles (%)		0				0				0	0	100		0	0	7
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized										No				No		
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	7.20		7.10	6.50	6.27
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	4.20		3.50	4.00	3.36

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		22				5				0		10		33		27
Capacity, c (veh/h)		1017				1293				0		574		259		532
v/c Ratio		0.02				0.00						0.02		0.13		0.05
95% Queue Length, Q_{95} (veh)		0.1				0.0						0.1		0.4		0.2
Control Delay (s/veh)		8.6	0.2	0.2		7.8	0.0	0.0				11.4		20.9		12.1
Level of Service (LOS)		A	A	A		A	A	A				B		C		B
Approach Delay (s/veh)	0.8				0.1								16.9			
Approach LOS	A				A								C			

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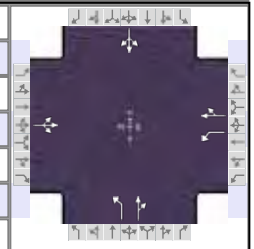
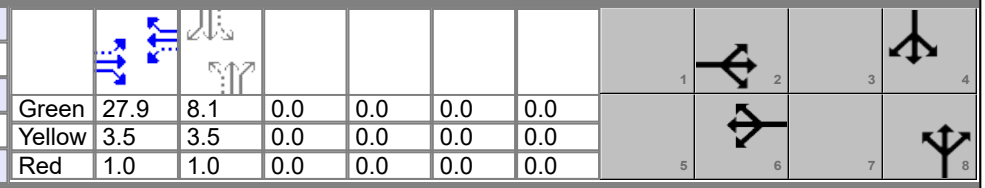
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & 2nd Street	File Name	(7) SD38&2nd_AM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	20	325	10	95	200	15	5	20	155	35	50	25

Signal Information			
Cycle, s	45.0	Reference Phase	6
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	27.9	8.1	0.0	0.0	0.0	0.0						
Yellow	3.5	3.5	0.0	0.0	0.0	0.0						
Red	1.0	1.0	0.0	0.0	0.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		6.0		6.0		8.0
Phase Duration, s		32.4		32.4		12.6		12.6
Change Period, ($Y+R_c$), s		4.5		4.5		4.5		4.5
Max Allow Headway (*MAH*), s		0.0		0.0		3.3		3.3
Queue Clearance Time (g_s), s						7.8		7.5
Green Extension Time (g_e), s		0.0		0.0		0.5		0.5
Phase Call Probability						0.98		0.98
Max Out Probability						0.01		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h		386		103	234		5	190			120	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1743		1018	1750		1317	1528			1105	
Queue Service Time (g_s), s		0.0		2.5	2.6		0.2	5.2			0.2	
Cycle Queue Clearance Time (g_c), s		4.8		7.3	2.6		5.8	5.2			5.5	
Green Ratio (*g/C*)		0.62		0.62	0.62		0.18	0.18			0.18	
Capacity (*c*), veh/h		1162		681	1082		236	278			306	
Volume-to-Capacity Ratio (*X*)		0.332		0.152	0.216		0.023	0.685			0.391	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)		1.9		0.8	1.1		0.1	2.9			1.7	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00		0.08	0.00		0.02	0.00			0.00	
Uniform Delay (d_1), s/veh		4.2		6.0	3.8		20.1	17.2			16.3	
Incremental Delay (d_2), s/veh		0.8		0.5	0.5		0.0	1.1			0.3	
Initial Queue Delay (d_3), s/veh		0.0		0.0	0.0		0.0	0.0			0.0	
Control Delay (*d*), s/veh		5.0		6.4	4.2		20.1	18.3			16.6	
Level of Service (LOS)		A		A	A		C	B			B	
Approach Delay, s/veh / LOS	5.0	A		4.9	A		18.4	B		16.6	B	
Intersection Delay, s/veh / LOS	8.8						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.84	B	1.62	B	1.91	B	1.68	B
Bicycle LOS Score / LOS	1.12	A	1.04	A	0.81	A	0.68	A

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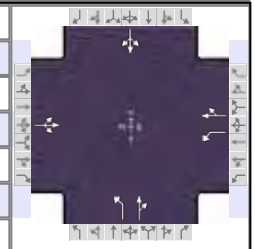
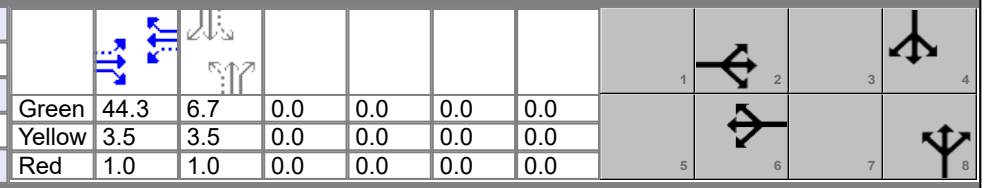
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	PM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & 2nd Street	File Name	(7) SD38&2nd_PM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	25	235	9	130	490	25	15	25	65	15	30	20

Signal Information			
Cycle, s	60.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	44.3	6.7	0.0	0.0	0.0	0.0						
Yellow	3.5	3.5	0.0	0.0	0.0	0.0						
Red	1.0	1.0	0.0	0.0	0.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		6.0		6.0		8.0
Phase Duration, s		48.8		48.8		11.2		11.2
Change Period, ($Y+R_c$), s		4.5		4.5		4.5		4.5
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.2
Queue Clearance Time (g_s), s						6.2		5.6
Green Extension Time (g_e), s		0.0		0.0		0.3		0.3
Phase Call Probability						0.95		0.95
Max Out Probability						0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h		292		141	560		16	98			71	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1663		1114	1757		1350	1568			1377	
Queue Service Time (g_s), s		0.0		2.7	7.3		0.7	3.5			0.0	
Cycle Queue Clearance Time (g_c), s		3.1		5.9	7.3		4.2	3.5			3.6	
Green Ratio (*g/C*)		0.74		0.74	0.74		0.11	0.11			0.11	
Capacity (*c*), veh/h		1294		885	1298		190	175			227	
Volume-to-Capacity Ratio (*X*)		0.226		0.160	0.431		0.086	0.560			0.311	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)		1.0		0.8	2.5		0.4	2.3			1.6	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00		0.08	0.00		0.07	0.00			0.00	
Uniform Delay (d_1), s/veh		2.5		3.4	3.0		27.3	25.3			24.7	
Incremental Delay (d_2), s/veh		0.4		0.4	1.0		0.1	1.0			0.3	
Initial Queue Delay (d_3), s/veh		0.0		0.0	0.0		0.0	0.0			0.0	
Control Delay (*d*), s/veh		2.9		3.8	4.1		27.4	26.3			25.0	
Level of Service (LOS)		A		A	A		C	C			C	
Approach Delay, s/veh / LOS	2.9	A		4.0	A		26.5	C		25.0	C	
Intersection Delay, s/veh / LOS	7.2						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.83	B	1.60	B	1.92	B	1.70	B
Bicycle LOS Score / LOS	0.97	A	1.64	B	0.68	A	0.60	A

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HCS Two-Way Stop-Control Report

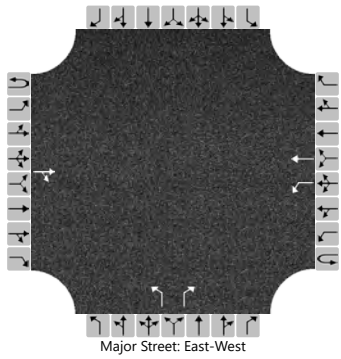
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & West Central HS Entrance
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	West Central HS Entrance
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		1	0	1		0	0	0
Configuration				TR		L	T			L		R				
Volume (veh/h)			425	90		55	285			35		50				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage			Left Only							9						

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						60				38		54				
Capacity, c (veh/h)						1021				576		567				
v/c Ratio						0.06				0.07		0.10				
95% Queue Length, Q_{95} (veh)						0.2				0.2		0.3				
Control Delay (s/veh)						8.7				11.7		12.0				
Level of Service (LOS)						A				B		B				
Approach Delay (s/veh)						1.4				11.9						
Approach LOS						A				B						

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HCS Two-Way Stop-Control Report

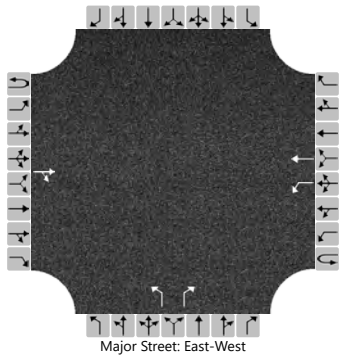
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & West Central HS Entrance
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	West Central HS Entrance
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		1	0	1		0	0	0
Configuration				TR		L	T			L		R				
Volume (veh/h)			305	4		4	620			15		15				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage			Left Only							9						

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						4				16		16				
Capacity, c (veh/h)						1235				500		713				
v/c Ratio						0.00				0.03		0.02				
95% Queue Length, Q_{95} (veh)						0.0				0.1		0.1				
Control Delay (s/veh)						7.9				12.4		10.2				
Level of Service (LOS)						A				B		B				
Approach Delay (s/veh)						0.1				11.3						
Approach LOS						A				B						

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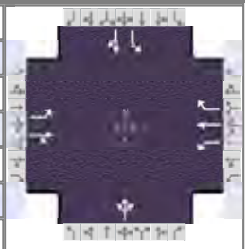
HCS Signalized Intersection Results Summary

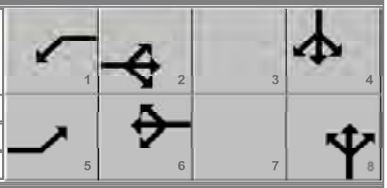
General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	CEC	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & Railroad Street	File Name	(9) SD38&Railroad_AM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	4	465	0	15	270	95	2	0	30	145	4	5

Signal Information			
Cycle, s	60.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	0.3	0.8	34.5	9.8	0.0	0.0
Yellow	3.5	0.0	4.0	4.0	0.0	0.0
Red	1.0	0.0	1.0	1.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	3.0		8.0		6.0
Phase Duration, s	4.8	39.5	5.7	40.3		14.8		14.8
Change Period, ($Y+R_c$), s	4.5	5.0	4.5	5.0		5.0		5.0
Max Allow Headway (*MAH*), s	4.1	0.0	4.1	0.0		4.2		4.2
Queue Clearance Time (g_s), s	2.1		2.2			3.2		9.8
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0		0.5		0.4
Phase Call Probability	0.07		0.24			0.97		0.97
Max Out Probability	0.00		0.00			0.00		0.13

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	4	0		16	293	103		35		158	10	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1688	1750		1688	1772	1502		1510		1376	1611	
Queue Service Time (g_s), s	0.1	0.0		0.2	4.9	1.8		0.0		6.6	0.3	
Cycle Queue Clearance Time (g_c), s	0.1	0.0		0.2	4.9	1.8		1.2		7.8	0.3	
Green Ratio (*g/C*)	0.58	0.43		0.59	0.59	0.59		0.16		0.16	0.16	
Capacity (*c*), veh/h	643			514	1042	883		312		319	265	
Volume-to-Capacity Ratio (*X*)	0.007	0.000		0.032	0.282	0.117		0.112		0.493	0.037	
Back of Queue (*Q*), ft/ln (95 th percentile)	0.8	0		2.9	69.3	22.2		18.2		95.5	5.1	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.0	0.0		0.1	2.7	0.9		0.7		3.8	0.2	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00		0.01	0.00	0.00		0.00		0.38	0.00	
Uniform Delay (d_1), s/veh	5.6			5.9	6.1	5.5		21.4		24.8	21.1	
Incremental Delay (d_2), s/veh	0.0	0.0		0.0	0.7	0.3		0.2		1.2	0.1	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (*d*), s/veh	5.6			5.9	6.8	5.7		21.6		26.0	21.1	
Level of Service (LOS)	A			A	A	A		C		C	C	
Approach Delay, s/veh / LOS	9.3	A		6.5	A		21.6	C		25.7	C	
Intersection Delay, s/veh / LOS	11.1						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.64	B	1.86	B	2.11	B	1.92	B
Bicycle LOS Score / LOS	1.33	A	1.17	A	0.54	A	0.76	A

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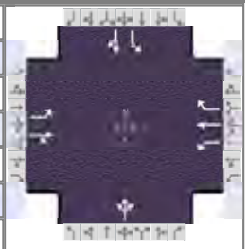
HCS Signalized Intersection Results Summary

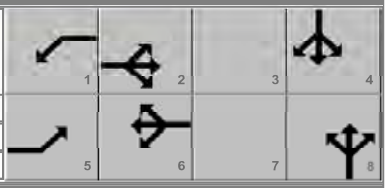
General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	CEC	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	PM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & Railroad Street	File Name	(9) SD38&Railroad_PM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	4	340	4	15	560	155	2	2	15	85	9	5

Signal Information			
Cycle, s	60.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	0.3	0.8	38.1	6.2	0.0	0.0
Yellow	3.5	0.0	4.0	4.0	0.0	0.0
Red	1.0	0.0	1.0	1.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	3.0		8.0		6.0
Phase Duration, s	4.8	43.1	5.7	44.0		11.2		11.2
Change Period, ($Y+R_c$), s	4.5	5.0	4.5	5.0		5.0		5.0
Max Allow Headway (*MAH*), s	4.1	0.0	4.1	0.0		4.2		4.2
Queue Clearance Time (g_s), s	2.1		2.3			2.7		6.7
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0		0.3		0.3
Phase Call Probability	0.07		0.24			0.88		0.88
Max Out Probability	0.00		0.00			0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	4	374		16	609	168		21		92	15	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1688	1768		1179	1772	1502		1536		1361	1665	
Queue Service Time (g_s), s	0.1	5.9		0.3	11.0	2.7		0.0		4.0	0.5	
Cycle Queue Clearance Time (g_c), s	0.1	5.9		0.3	11.0	2.7		0.7		4.7	0.5	
Green Ratio (*g/C*)	0.64	0.64		0.66	0.65	0.65		0.10		0.10	0.10	
Capacity (*c*), veh/h	481	1124		522	1151	975		224		244	171	
Volume-to-Capacity Ratio (*X*)	0.009	0.333		0.031	0.529	0.173		0.092		0.379	0.089	
Back of Queue (*Q*), ft/ln (95 th percentile)	0.6	75.5		2.8	141.4	28.5		11.8		58.9	8.8	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.0	3.0		0.1	5.6	1.1		0.5		2.3	0.3	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00		0.01	0.00	0.00		0.00		0.24	0.00	
Uniform Delay (d_1), s/veh	5.1	5.1		3.9	5.6	4.1		24.5		26.6	24.4	
Incremental Delay (d_2), s/veh	0.0	0.8		0.0	1.7	0.4		0.2		1.0	0.2	
Initial Queue Delay (d_3), s/veh	0.0	0.0		0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (*d*), s/veh	5.1	5.8		3.9	7.4	4.5		24.6		27.6	24.6	
Level of Service (LOS)	A	A		A	A	A		C		C	C	
Approach Delay, s/veh / LOS	5.8	A		6.7	A		24.6	C		27.1	C	
Intersection Delay, s/veh / LOS	8.4						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.63	B	1.85	B	2.12	B	1.93	B
Bicycle LOS Score / LOS	1.11	A	1.80	B	0.52	A	0.67	A

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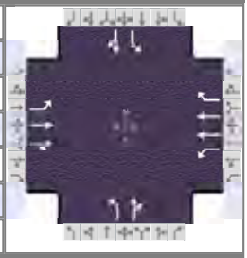
HCS Signalized Intersection Results Summary

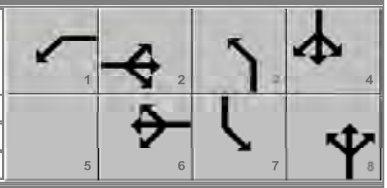
General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & Mickelson Roa…	File Name	(10) SD38&Mickelson_AM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	135	445	35	40	195	190	45	55	65	215	20	195

Signal Information			
Cycle, s	70.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	2.9	35.1	3.1	2.9	10.0	0.0
Yellow	4.0	4.0	4.0	0.0	4.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6	3	8	7	4
Case Number		6.3	1.0	3.0	1.1	4.0	1.1	4.0
Phase Duration, s		39.1	6.9	46.0	7.1	14.0	10.0	16.9
Change Period, ($Y+R_c$), s		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s		0.0	3.1	0.0	3.1	3.3	3.1	3.3
Queue Clearance Time (g_s), s			2.8		3.7	7.3	8.0	12.3
Green Extension Time (g_e), s		0.0	0.0	0.0	0.0	0.5	0.0	0.6
Phase Call Probability			0.57		0.61	1.00	0.99	1.00
Max Out Probability			0.00		1.00	0.03	1.00	0.01

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	147	264	258	43	212	207	49	130		234	234	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1170	1772	1726	1688	1687	1323	1688	1615		1688	1523	
Queue Service Time (g_s), s	5.0	6.1	6.1	0.8	1.9	5.2	1.7	5.3		6.0	10.3	
Cycle Queue Clearance Time (g_c), s	5.0	6.1	6.1	0.8	1.9	5.2	1.7	5.3		6.0	10.3	
Green Ratio (*g/C*)	0.50	0.50	0.50	0.57	0.60	0.60	0.19	0.14		0.24	0.18	
Capacity (*c*), veh/h	690	890	867	536	2024	794	187	231		333	282	
Volume-to-Capacity Ratio (*X*)	0.213	0.296	0.298	0.081	0.105	0.260	0.262	0.565		0.702	0.830	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	2.2	4.0	4.0	0.4	1.0	2.4	1.2	3.5		2.5	6.7	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	
Uniform Delay (d_1), s/veh	9.9	10.2	10.2	7.1	6.0	6.6	24.5	28.0		25.5	27.5	
Incremental Delay (d_2), s/veh	0.7	0.8	0.9	0.0	0.1	0.8	0.3	0.8		5.5	2.4	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	10.6	11.0	11.1	7.1	6.1	7.4	24.8	28.8		31.1	29.9	
Level of Service (LOS)	B	B	B	A	A	A	C	C		C	C	
Approach Delay, s/veh / LOS	11.0	B		6.8	A		27.7	C		30.5	C	
Intersection Delay, s/veh / LOS	16.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.88	B	1.87	B	2.44	B	2.28	B
Bicycle LOS Score / LOS	1.04	A	0.87	A	0.78	A	1.26	A

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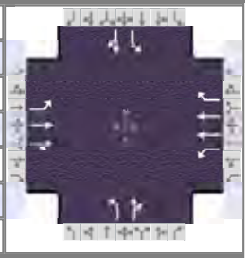
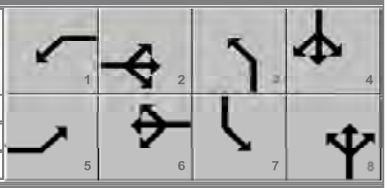
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & Mickelson Roa…	File Name	(10) SD38&Mickelson_PM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	160	220	20	135	535	225	20	65	10	215	15	185

Signal Information												
Cycle, s	70.0	Reference Phase	2									
Offset, s	0	Reference Point	End	Green	5.0	0.7	30.8	1.7	1.3	7.0		
Uncoordinated	No	Simult. Gap E/W	On	Yellow	3.5	0.0	4.0	3.5	3.5	4.0		
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	0.0	1.0	1.0	1.0	1.0		



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	4.0	1.1	3.0	1.1	4.0	1.1	4.0
Phase Duration, s	10.2	36.5	9.5	35.8	6.2	12.0	12.0	17.8
Change Period, ($Y+R_c$), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.3	3.1	3.3
Queue Clearance Time (g_s), s	5.8		5.3		2.8	5.1	9.5	11.6
Green Extension Time (g_e), s	0.1	0.0	0.1	0.0	0.0	0.3	0.0	0.2
Phase Call Probability	0.97		0.94		0.34	1.00	0.99	1.00
Max Out Probability	1.00		1.00		1.00	0.63	1.00	1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	174	131	130	147	582	245	22	82		234	217	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1688	1772	1720	1688	1687	1323	1688	1730		1688	1519	
Queue Service Time (g_s), s	3.8	3.1	3.1	3.3	8.2	8.9	0.8	3.1		7.5	9.6	
Cycle Queue Clearance Time (g_c), s	3.8	3.1	3.1	3.3	8.2	8.9	0.8	3.1		7.5	9.6	
Green Ratio (*g/C*)	0.52	0.45	0.45	0.51	0.44	0.44	0.12	0.10		0.24	0.18	
Capacity (*c*), veh/h	510	798	774	645	1484	582	164	173		356	277	
Volume-to-Capacity Ratio (*X*)	0.341	0.165	0.167	0.228	0.392	0.420	0.132	0.472		0.656	0.785	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	2.2	2.1	2.1	1.9	5.2	4.8	0.6	2.3		6.3	7.1	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	
Uniform Delay (d_1), s/veh	9.5	11.4	11.4	9.3	13.3	13.5	27.4	29.8		24.6	27.3	
Incremental Delay (d_2), s/veh	0.1	0.4	0.5	0.1	0.8	2.2	0.1	0.7		3.4	8.9	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	9.7	11.9	11.9	9.4	14.0	15.7	27.6	30.5		28.0	36.2	
Level of Service (LOS)	A	B	B	A	B	B	C	C		C	D	
Approach Delay, s/veh / LOS	11.0	B		13.8	B		29.9	C		32.0	C	
Intersection Delay, s/veh / LOS	18.2						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.89	B	1.89	B	2.44	B	2.28	B
Bicycle LOS Score / LOS	0.85	A	1.29	A	0.66	A	1.23	A

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HCS Two-Way Stop-Control Report

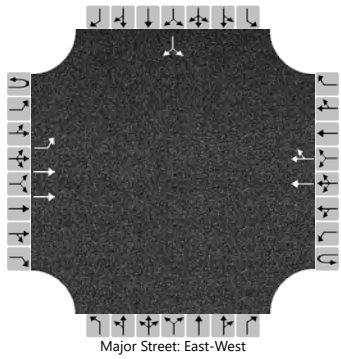
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD38 & 466th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	466th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		0	1	0
Configuration		L	T				T	TR							LR	
Volume (veh/h)	0	2	765				430	5						4		0
Percent Heavy Vehicles (%)	3	0												50		3
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized																
Median Type | Storage	Left Only								9							

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.10												7.80		6.96
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												4.00		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2													4	
Capacity, c (veh/h)		1100													457	
v/c Ratio		0.00													0.01	
95% Queue Length, Q_{95} (veh)		0.0													0.0	
Control Delay (s/veh)		8.3													12.9	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)	0.0												12.9			
Approach LOS	A												B			

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HCS Two-Way Stop-Control Report

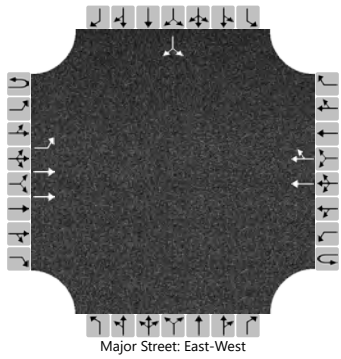
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD38 & 466th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	466th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		0	1	0
Configuration		L	T				T	TR							LR	
Volume (veh/h)	0	0	445				910	2						5		2
Percent Heavy Vehicles (%)	3	0												33		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Left Only								9							

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.10												7.46		6.90
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.83		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													8	
Capacity, c (veh/h)		705													299	
v/c Ratio		0.00													0.03	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		10.1													17.3	
Level of Service (LOS)		B													C	
Approach Delay (s/veh)	0.0												17.3			
Approach LOS	A												C			

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HCS Two-Way Stop-Control Report

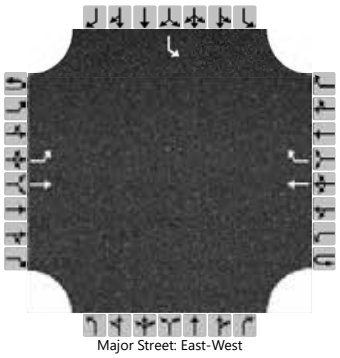
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	12/12/2023
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 WB Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 WB Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		1	0	0
Configuration		L	T				T	R						L		
Volume (veh/h)		40	730				255	20						15		
Percent Heavy Vehicles (%)		0												56		
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage							Left Only							9		

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		
Critical Headway (sec)		4.10												6.96		
Base Follow-Up Headway (sec)		2.2												3.5		
Follow-Up Headway (sec)		2.20												4.00		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		43												16		
Capacity, c (veh/h)		1274												315		
v/c Ratio		0.03												0.05		
95% Queue Length, Q_{95} (veh)		0.1												0.2		
Control Delay (s/veh)		7.9	0.2											17.1		
Level of Service (LOS)		A	A											C		
Approach Delay (s/veh)		0.6												17.1		
Approach LOS		A												C		

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HCS Two-Way Stop-Control Report

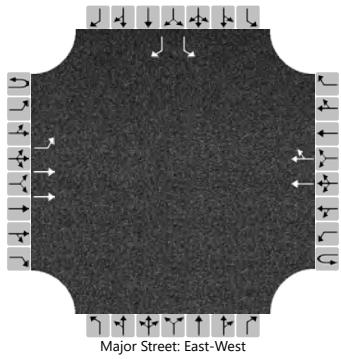
General Information

Analyst	CEC
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 WB Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 WB Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		1	0	1
Configuration		L	T				T	TR						L		R
Volume (veh/h)	0	40	730				255	20						15		190
Percent Heavy Vehicles (%)	3	0												56		12
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized														No		
Median Type | Storage			Left Only								9					

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.10												7.92		7.14
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												4.06		3.42

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		43												16		207
Capacity, c (veh/h)		1274												435		839
v/c Ratio		0.03												0.04		0.25
95% Queue Length, Q_{95} (veh)		0.1												0.1		1.0
Control Delay (s/veh)		7.9												13.6		10.7
Level of Service (LOS)		A												B		B
Approach Delay (s/veh)		0.4												10.9		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

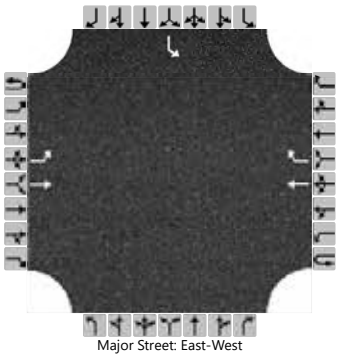
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 WB Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 WB Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		1	0	0
Configuration		L	T				T	R						L		
Volume (veh/h)		25	420				415	35						30		
Percent Heavy Vehicles (%)		0												6		
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized						No										
Median Type | Storage			Left Only								9					

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		
Critical Headway (sec)		4.10												6.46		
Base Follow-Up Headway (sec)		2.2												3.5		
Follow-Up Headway (sec)		2.20												3.55		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		27												33		
Capacity, c (veh/h)		1085												562		
v/c Ratio		0.03												0.06		
95% Queue Length, Q_{95} (veh)		0.1												0.2		
Control Delay (s/veh)		8.4	0.2											11.8		
Level of Service (LOS)		A	A											B		
Approach Delay (s/veh)		0.6												11.8		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

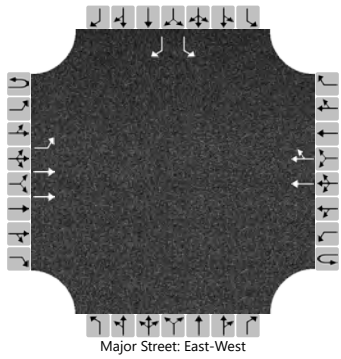
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 WB Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 WB Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		1	0	1
Configuration		L	T				T	TR						L		R
Volume (veh/h)	0	25	420				415	35						30		495
Percent Heavy Vehicles (%)	3	0												6		2
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized														No		
Median Type | Storage			Left Only								9					

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.10												6.92		6.94
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.56		3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		27												33		538
Capacity, c (veh/h)		1085												578		756
v/c Ratio		0.03												0.06		0.71
95% Queue Length, Q_{95} (veh)		0.1												0.2		6.1
Control Delay (s/veh)		8.4												11.6		20.6
Level of Service (LOS)		A												B		C
Approach Delay (s/veh)		0.5												20.1		
Approach LOS		A												C		

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HCS Two-Way Stop-Control Report

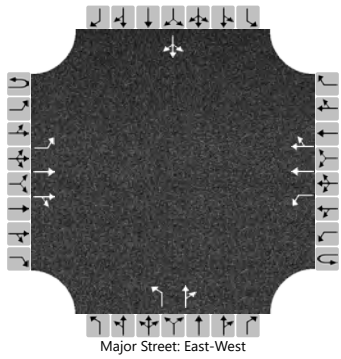
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 EB Ramp Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 EB Ramp Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		1	1	0		0	1	0
Configuration		L	T	TR		L	T	TR		L		TR			LTR	
Volume (veh/h)	0	190	265	20	0	15	420	30		30	15	25		30	10	35
Percent Heavy Vehicles (%)	3	10			3	11				20	20	0		8	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.30				4.32				7.90	6.90	6.90		7.66	6.56	6.96
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.30				2.31				3.70	4.20	3.30		3.58	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		207				16				33		43			82	
Capacity, c (veh/h)		1016				1185				122		259			193	
v/c Ratio		0.20				0.01				0.27		0.17			0.42	
95% Queue Length, Q_{95} (veh)		0.8				0.0				1.0		0.6			1.9	
Control Delay (s/veh)		9.4	0.6			8.1	0.1			44.7		21.7			36.6	
Level of Service (LOS)		A	A			A	A			E		C			E	
Approach Delay (s/veh)	4.1				0.4				31.6				36.6			
Approach LOS	A				A				D				E			

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HCS Two-Way Stop-Control Report

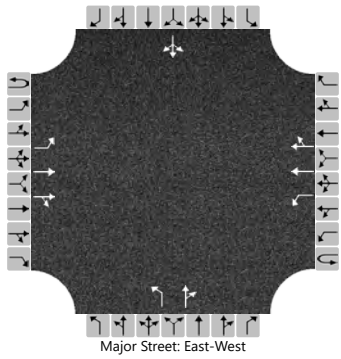
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD38/I-90 EB Ramp Terminal/466th St
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 EB Ramp Terminal/466th Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		1	1	0		0	1	0
Configuration		L	T	TR		L	T	TR		L		TR			LTR	
Volume (veh/h)	0	430	300	15	0	20	240	20		15	10	20		3	2	28
Percent Heavy Vehicles (%)	3	2			3	20				33	33	60		33	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.50				8.16	7.16	8.10		8.16	6.50	6.90
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.40				3.83	4.33	3.90		3.83	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		467				22				16		33			36	
Capacity, c (veh/h)		1277				1094				40		128			231	
v/c Ratio		0.37				0.02				0.41		0.25			0.16	
95% Queue Length, Q_{95} (veh)		1.7				0.1				1.4		1.0			0.5	
Control Delay (s/veh)		9.4	0.6			8.4	0.1			146.1		42.5			23.4	
Level of Service (LOS)		A	A			A	A			F		E			C	
Approach Delay (s/veh)	5.7				0.7				77.0				23.4			
Approach LOS	A				A				F				C			

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HCS Two-Way Stop-Control Report

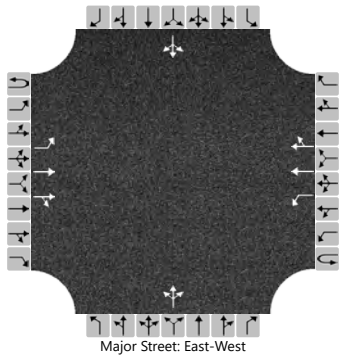
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 468th Avenue
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	468th Ave / County Highway 141
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LTR				LTR	
Volume (veh/h)	0	4	360	0	0	0	225	50		2	2	0		50	0	7
Percent Heavy Vehicles (%)	3	0			3	0				0	100	0		4	0	50
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.10				4.10				7.50	8.50	6.90		7.58	6.50	7.90
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	5.00	3.30		3.54	4.00	3.80

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		4				0					4				62	
Capacity, c (veh/h)		1274				1178					284				483	
v/c Ratio		0.00				0.00					0.02				0.13	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.4	
Control Delay (s/veh)		7.8	0.0			8.1	0.0				17.9				13.6	
Level of Service (LOS)		A	A			A	A				C				B	
Approach Delay (s/veh)	0.1				0.0				17.9				13.6			
Approach LOS	A				A				C				B			

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HCS Two-Way Stop-Control Report

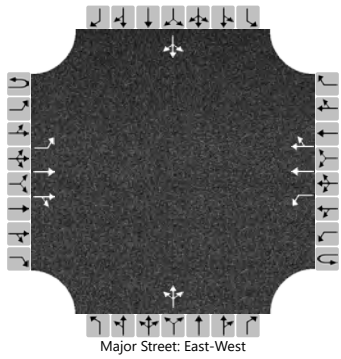
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 468th Avenue
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	468th Ave / County Highway 141
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LTR				LTR	
Volume (veh/h)	0	0	310	2	0	5	420	55		2	2	0		50	4	4
Percent Heavy Vehicles (%)	3	0			3	0				0	0	0		4	100	50
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.10				4.10				7.50	6.50	6.90		7.58	8.50	7.90
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.30		3.54	5.00	3.80

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				5					4				63	
Capacity, c (veh/h)		1060				1231					326				324	
v/c Ratio		0.00				0.00					0.01				0.19	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.7	
Control Delay (s/veh)		8.4	0.0			7.9	0.0				16.2				18.8	
Level of Service (LOS)		A	A			A	A				C				C	
Approach Delay (s/veh)	0.0				0.1				16.2				18.8			
Approach LOS	A				A				C				C			

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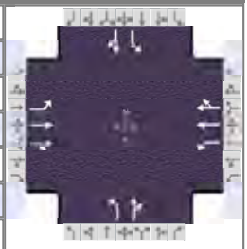
HCS Signalized Intersection Results Summary

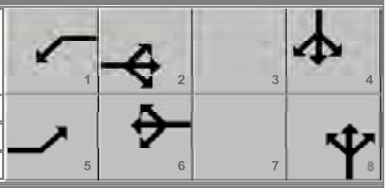
General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	CEC	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & 469th Ave	File Name	(17) SD38&469_AM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	5	330	75	75	165	5	110	5	280	15	5	5

Signal Information			
Cycle, s	60.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	0.4	3.3	25.6	16.2	0.0	0.0
Yellow	3.5	0.0	4.0	4.0	0.0	0.0
Red	1.0	0.0	1.0	1.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		6.0		6.0
Phase Duration, s	4.9	30.6	8.2	33.9		21.2		21.2
Change Period, ($Y+R_c$), s	4.5	5.0	4.5	5.0		5.0		5.0
Max Allow Headway (*MAH*), s	3.9	0.0	3.9	0.0		4.1		4.1
Queue Clearance Time (g_s), s	2.1		3.6			14.7		15.6
Green Extension Time (g_e), s	0.0	0.0	0.1	0.0		0.7		0.6
Phase Call Probability	0.09		0.74			1.00		1.00
Max Out Probability	0.01		0.38			0.95		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	5	225	215	82	93	92	120	310		16	11	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1674	1758	1646	1647	1730	1712	1426	1374		1061	1613	
Queue Service Time (g_s), s	0.1	5.1	5.2	1.6	1.8	1.8	4.0	12.7		0.9	0.3	
Cycle Queue Clearance Time (g_c), s	0.1	5.1	5.2	1.6	1.8	1.8	4.3	12.7		13.6	0.3	
Green Ratio (*g/C*)	0.43	0.43	0.43	0.50	0.48	0.48	0.27	0.27		0.27	0.27	
Capacity (*c*), veh/h	629	750	702	537	832	824	498	371		182	435	
Volume-to-Capacity Ratio (*X*)	0.009	0.300	0.306	0.152	0.111	0.112	0.240	0.835		0.090	0.025	
Back of Queue (*Q*), ft/ln (95 th percentile)	1.3	70.1	67.9	16.1	21.9	21.9	49.8	219		9.4	4.3	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.0	2.7	2.7	0.6	0.8	0.8	2.0	7.9		0.4	0.2	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.01	0.00	0.00	0.06	0.00	0.00	0.20	0.00		0.04	0.00	
Uniform Delay (d_1), s/veh	9.7	11.3	11.4	8.2	8.5	8.5	17.7	20.6		27.0	16.1	
Incremental Delay (d_2), s/veh	0.0	1.0	1.1	0.1	0.3	0.3	0.2	11.6		0.2	0.0	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	9.7	12.3	12.5	8.3	8.8	8.8	17.9	32.3		27.2	16.1	
Level of Service (LOS)	A	B	B	A	A	A	B	C		C	B	
Approach Delay, s/veh / LOS	12.4	B		8.7	A		28.3	C		22.8	C	
Intersection Delay, s/veh / LOS	17.6						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.89	B	1.88	B	2.27	B	2.27	B
Bicycle LOS Score / LOS	0.86	A	0.71	A	1.20	A	0.53	A

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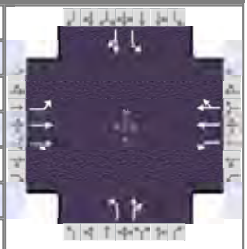
HCS Signalized Intersection Results Summary

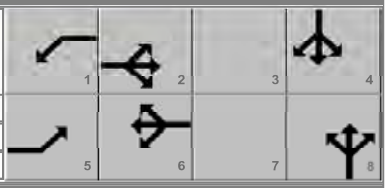
General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	CEC	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & 469th Ave	File Name	(17) SD38&469_PM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	5	245	120	285	380	5	100	5	120	15	5	10

Signal Information			
Cycle, s	60.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	0.4	2.7	29.4	8.5	0.0	0.0
Yellow	3.5	3.5	4.0	4.0	0.0	0.0
Red	1.0	1.0	1.0	1.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		6.0		6.0
Phase Duration, s	4.9	34.4	12.1	41.6		13.5		13.5
Change Period, ($Y+R_c$), s	4.5	5.0	4.5	5.0		5.0		5.0
Max Allow Headway (*MAH*), s	3.9	0.0	3.9	0.0		4.1		4.1
Queue Clearance Time (g_s), s	2.1		6.9			7.1		7.9
Green Extension Time (g_e), s	0.0	0.0	0.8	0.0		0.7		0.6
Phase Call Probability	0.09		0.99			0.99		0.99
Max Out Probability	0.00		0.01			0.02		0.03

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	5	206	191	310	210	209	109	136		16	16	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1674	1758	1565	1647	1730	1722	1397	1499		1244	1570	
Queue Service Time (g_s), s	0.1	4.1	4.2	4.9	3.2	3.2	4.4	5.1		0.8	0.5	
Cycle Queue Clearance Time (g_c), s	0.1	4.1	4.2	4.9	3.2	3.2	4.9	5.1		5.9	0.5	
Green Ratio (*g/C*)	0.50	0.49	0.49	0.65	0.61	0.61	0.14	0.14		0.14	0.14	
Capacity (*c*), veh/h	603	862	767	733	1054	1049	305	212		190	222	
Volume-to-Capacity Ratio (*X*)	0.009	0.239	0.249	0.423	0.199	0.199	0.356	0.640		0.086	0.073	
Back of Queue (*Q*), ft/ln (95 th percentile)	1	50.2	47.4	26.7	28.4	28.4	58.9	79.5		9.4	8.2	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.0	2.0	1.9	1.0	1.1	1.1	2.3	3.1		0.4	0.3	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.11	0.00	0.00	0.24	0.00		0.04	0.00	
Uniform Delay (d_1), s/veh	7.6	8.8	8.9	5.0	5.2	5.2	24.5	24.3		27.1	22.3	
Incremental Delay (d_2), s/veh	0.0	0.7	0.8	0.4	0.4	0.4	0.7	3.2		0.2	0.1	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	7.6	9.5	9.7	5.4	5.6	5.6	25.2	27.5		27.3	22.5	
Level of Service (LOS)	A	A	A	A	A	A	C	C		C	C	
Approach Delay, s/veh / LOS	9.5	A		5.5	A		26.5	C		24.9	C	
Intersection Delay, s/veh / LOS	10.8						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.88	B	1.86	B	2.28	B	2.28	B
Bicycle LOS Score / LOS	0.82	A	1.09	A	0.89	A	0.54	A

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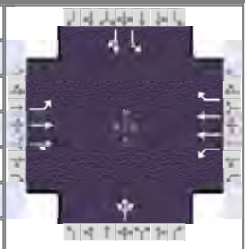
HCS Signalized Intersection Results Summary

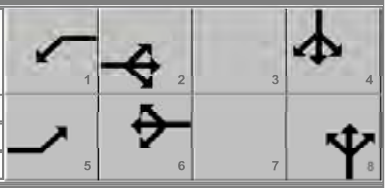
General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	CEC	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & La Mesa Drive	File Name	(17) SD38&LaMesa_AM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	30	700	4	0	235	15	0	15	5	75	4	30

Signal Information			
Cycle, s	60.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	2.1	25.4	18.0	0.0	0.0	0.0
Yellow	3.5	4.0	4.0	0.0	0.0	0.0
Red	1.0	1.0	1.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	3.0		8.0		6.0
Phase Duration, s	6.6	37.0	0.0	30.4		23.0		23.0
Change Period, ($Y+R_c$), s	4.5	5.0	5.0	5.0		5.0		5.0
Max Allow Headway (*MAH*), s	3.9	0.0	0.0	0.0		4.0		4.0
Queue Clearance Time (g_s), s	2.6					2.6		20.0
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0		0.3		0.0
Phase Call Probability	0.42					0.90		0.90
Max Out Probability	1.00					0.00		1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	33	383	382	0	255	16		0		82	37	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1674	1758	1754	1674	1674	1323		1434		1412	948	
Queue Service Time (g_s), s	0.6	7.8	7.8	0.0	2.9	0.4		0.0		2.6	1.7	
Cycle Queue Clearance Time (g_c), s	0.6	7.8	7.8	0.0	2.9	0.4		0.0		3.2	1.7	
Green Ratio (*g/C*)	0.49	0.53	0.53	0.34	0.42	0.42		0.10		0.30	0.30	
Capacity (*c*), veh/h	598	938	936	380	1417	560				530	284	
Volume-to-Capacity Ratio (*X*)	0.055	0.409	0.409	0.000	0.180	0.029		0.000		0.154	0.130	
Back of Queue (*Q*), ft/ln (95 th percentile)	6.3	90.3	90.2	0	35.1	5.1		0		31.4	19.6	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.2	3.5	3.5	0.0	1.4	0.2		0.0		1.3	0.6	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.03	0.00	0.00	0.00	0.00	0.02		0.00		0.13	0.00	
Uniform Delay (d_1), s/veh	8.1	8.4	8.4	0.0	10.8	10.1				16.0	15.3	
Incremental Delay (d_2), s/veh	0.0	1.3	1.3	0.0	0.3	0.1		0.0		0.1	0.2	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (*d*), s/veh	8.1	9.7	9.7	0.0	11.1	10.2				16.2	15.5	
Level of Service (LOS)	A	A	A		B	B				B	B	
Approach Delay, s/veh / LOS	9.6	A		11.0	B		15.0	B		16.0	B	
Intersection Delay, s/veh / LOS	10.6						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.65	B	1.89	B	2.42	B	2.26	B
Bicycle LOS Score / LOS	1.15	A	0.71	A	0.52	A	0.68	A

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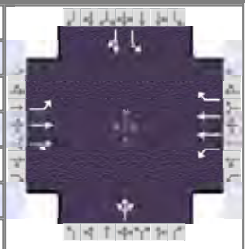
HCS Signalized Intersection Results Summary

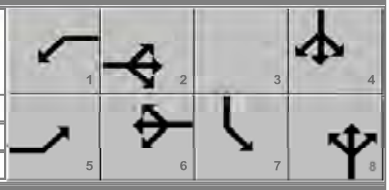
General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	CEC	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	PM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & La Mesa Drive	File Name	(17) SD38&LaMesa_PM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	25	325	0	9	735	100	4	5	0	80	15	30

Signal Information			
Cycle, s	65.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	0.8	0.6	24.8	4.0	15.3	0.0	
Yellow	4.0	0.0	4.0	3.5	4.0	0.0	
Red	1.0	0.0	1.0	1.0	1.0	0.0	



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8	7	4
Case Number	1.1	4.0	1.1	3.0		8.3	1.0	4.0
Phase Duration, s	6.4	30.4	5.8	29.8		20.3	8.5	28.7
Change Period, ($Y+R_c$), s	4.5	5.0	5.0	5.0		5.0	4.5	5.0
Max Allow Headway (*MAH*), s	3.9	0.0	3.9	0.0		4.0	3.9	4.0
Queue Clearance Time (g_s), s	2.6		2.2			17.2	4.5	25.7
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Phase Call Probability	0.39		0.16			0.65	0.79	0.93
Max Out Probability	0.02		0.01			1.00	1.00	1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	27	353	0	10	799	109		10		87	49	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1674	1758	1490	1674	1674	1323		297		1594	1582	
Queue Service Time (g_s), s	0.6	4.4	0.0	0.2	12.6	3.6		0.1		2.5	1.3	
Cycle Queue Clearance Time (g_c), s	0.6	4.4	0.0	0.2	12.6	3.6		15.2		2.5	1.3	
Green Ratio (*g/C*)	0.41	0.39	0.53	0.40	0.38	0.38		0.24		0.33	0.37	
Capacity (*c*), veh/h	290	1381		433	1282	507		149		210	576	
Volume-to-Capacity Ratio (*X*)	0.094	0.256	0.000	0.023	0.623	0.214		0.065		0.413	0.085	
Back of Queue (*Q*), ft/ln (95 th percentile)	8.2	62.5	0	3	179.9	47.1		4.8		39.7	17.7	
Back of Queue (*Q*), veh/ln (95 th percentile)	0.3	2.4	0.0	0.1	7.0	1.7		0.2		1.5	0.7	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.03	0.00	0.00	0.01	0.00	0.19		0.00		0.16	0.00	
Uniform Delay (d_1), s/veh	12.6	13.3		12.2	16.2	13.5		20.4		17.9	13.6	
Incremental Delay (d_2), s/veh	0.1	0.4	0.0	0.0	2.3	1.0		0.2		1.3	0.1	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Control Delay (*d*), s/veh	12.8	13.8		12.2	18.5	14.4		20.6		19.2	13.6	
Level of Service (LOS)	B	B		B	B	B		C		B	B	
Approach Delay, s/veh / LOS	13.7	B		18.0	B		20.6	C		17.2	B	
Intersection Delay, s/veh / LOS	16.8						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.67	B	1.90	B	2.43	B	2.26	B
Bicycle LOS Score / LOS	0.80	A	1.24	A	0.50	A	0.71	A

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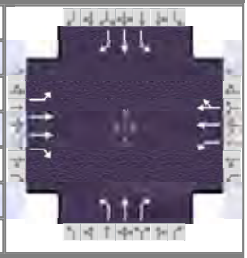
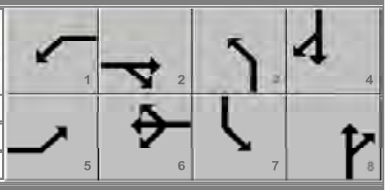
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & Marion Street	File Name	(18) SD38&Marion_AM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	165	340	105	50	125	75	110	225	120	45	145	40

Signal Information										
Cycle, s	50.0	Reference Phase	2							
Offset, s	0	Reference Point	End							
Uncoordinated	No	Simult. Gap E/W	On							
Force Mode	Fixed	Simult. Gap N/S	On							
				Green	2.6	3.9	12.9	2.5	2.0	10.0
				Yellow	4.0	0.0	4.0	4.0	0.0	4.0
				Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	1.1	4.0	2.0	3.0	2.0	3.0
Phase Duration, s	10.6	20.8	6.6	16.9	8.5	16.0	6.5	14.0
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	2.9	0.0	2.9	0.0	2.9	2.9	2.9	2.9
Queue Clearance Time (g_s), s	7.1		3.1		5.6	8.5	3.5	5.9
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.6
Phase Call Probability	0.92		0.53		0.81	1.00	0.49	1.00
Max Out Probability	1.00		0.04		1.00	0.21	1.00	0.15

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	179	370	114	54	112	106	120	245	130	49	158	43
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1701	1674	1525	1714	1772	1556	1647	1674	1502	1554	1758	1466
Queue Service Time (g_s), s	5.1	4.1	2.7	1.1	2.5	2.7	3.6	6.5	3.6	1.5	3.9	1.2
Cycle Queue Clearance Time (g_c), s	5.1	4.1	2.7	1.1	2.5	2.7	3.6	6.5	3.6	1.5	3.9	1.2
Green Ratio (*g/C*)	0.13	0.34	0.34	0.31	0.26	0.26	0.09	0.24	0.24	0.05	0.20	0.20
Capacity (*c*), veh/h	223	1128	514	456	459	403	148	403	361	77	352	293
Volume-to-Capacity Ratio (*X*)	0.804	0.328	0.222	0.119	0.243	0.263	0.806	0.607	0.361	0.638	0.448	0.148
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	4.1	2.2	1.4	0.6	1.6	1.6	3.2	3.5	1.7	1.0	2.3	0.6
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	21.1	12.4	11.9	12.3	14.7	14.7	22.3	16.9	15.8	23.3	17.6	16.5
Incremental Delay (d_2), s/veh	11.0	0.8	1.0	0.0	1.3	1.6	15.9	0.8	0.2	3.3	0.3	0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	32.1	13.1	12.9	12.3	15.9	16.3	38.2	17.7	16.0	26.6	17.9	16.6
Level of Service (LOS)	C	B	B	B	B	B	D	B	B	C	B	B
Approach Delay, s/veh / LOS	18.2	B		15.4	B		22.2	C		19.4	B	
Intersection Delay, s/veh / LOS	19.1						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.08	B	2.09	B	2.26	B	2.42	B
Bicycle LOS Score / LOS	1.03	A	0.71	A	1.30	A	0.90	A

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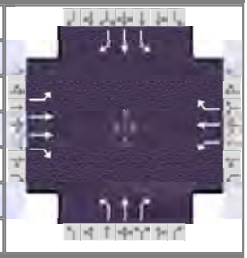
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	PM Peak	PHF	0.90
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 16:45
Intersection	SD 38 & Marion Street	File Name	(18) SD38&Marion_PM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	70	230	105	170	355	55	180	205	125	85	355	205

Signal Information												
Cycle, s	60.0	Reference Phase	2									
Offset, s	0	Reference Point	End	Green	3.7	0.4	13.3	4.2	2.8	15.5		
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	4.0	4.0	4.0	0.0	4.0		
Force Mode	Fixed	Simult. Gap N/S	On	Red	0.0	0.0	0.0	0.0	0.0	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	7.7	17.3	12.2	21.7	11.0	22.3	8.2	19.5
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	2.9	0.0	2.9	0.0	2.9	3.0	2.9	3.0
Queue Clearance Time (g_s), s	5.1		8.5		9.0	8.1	5.3	14.7
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.8
Phase Call Probability	0.73		0.96		0.96	1.00	0.79	1.00
Max Out Probability	0.55		1.00		1.00	0.03	1.00	0.89

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	78	256	117	189	394	61	200	228	139	94	394	228
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1474	1660	1490	1688	1772	1406	1714	1772	1478	1688	1772	1478
Queue Service Time (g_s), s	3.1	3.9	4.0	6.5	12.1	1.9	7.0	6.1	4.3	3.3	12.7	8.1
Cycle Queue Clearance Time (g_c), s	3.1	3.9	4.0	6.5	12.1	1.9	7.0	6.1	4.3	3.3	12.7	8.1
Green Ratio (*g/C*)	0.06	0.22	0.22	0.14	0.30	0.30	0.12	0.31	0.31	0.07	0.26	0.26
Capacity (*c*), veh/h	92	735	330	230	523	415	200	541	451	119	459	383
Volume-to-Capacity Ratio (*X*)	0.845	0.347	0.354	0.822	0.754	0.147	1.000	0.421	0.308	0.797	0.859	0.595
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	2.1	2.5	2.5	6.1	9.1	1.0	10.0	3.6	2.1	2.7	9.5	4.2
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	27.8	19.7	19.7	25.2	19.2	15.6	26.5	16.6	16.0	27.5	21.2	19.5
Incremental Delay (d_2), s/veh	7.7	1.3	3.0	18.3	9.7	0.7	63.6	0.2	0.1	10.2	10.8	0.7
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	35.6	21.0	22.7	43.5	28.9	16.3	90.1	16.8	16.1	37.7	31.9	20.2
Level of Service (LOS)	D	C	C	D	C	B	F	B	B	D	C	C
Approach Delay, s/veh / LOS	23.9	C		32.0	C		42.5	D		29.0	C	
Intersection Delay, s/veh / LOS	32.1						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.10	B	2.10	B	2.26	B	2.27	B
Bicycle LOS Score / LOS	0.86	A	1.55	B	1.42	A	1.67	B

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	10/17/2023
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD 38 Build	Time Analyzed	2050
Project Description	464th_MickelsonRd_2050_AM	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	55.0	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	638	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	370
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2100
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2100
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.18

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	6.7
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	362	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.66
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	8.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	53.0	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	380	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	244
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2060
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2060
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	2.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	216	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	6.14
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	10/17/2023
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build	Time Analyzed	PM
Project Description	464th_MickelsonRd_PM	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	55.0	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	441	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	266
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2100
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2100
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.13

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.8
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	251	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.56
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	D

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	55.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	8.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	53.0	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	730	Heavy Vehicle Adjustment Factor (f_{HV})	0.990
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	419
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2060
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2060
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.20

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	53.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	7.9
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	2.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	415	Effective Speed Factor (S_t)	4.62
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.50
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	B

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR GREEN INC	Analysis Year	2050
Jurisdiction	SD 38	Time Analyzed	PM
Project Description	2050 Build Analysis - 468th St to 469th St	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.8	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	410	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	244
Total Trucks, %	5.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.11

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.8
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.5
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	233	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.42
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	5.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	68.8	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	280	Heavy Vehicle Adjustment Factor (f_{HV})	0.862
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	184
Total Trucks, %	16.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.08

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.8
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	2.7
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	1.3		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	159	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	8.07
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR GREEN INC	Analysis Year	2050
Jurisdiction	SD 38	Time Analyzed	PM
Project Description	2050 Build Analysis - 468th St to 469th St	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.8	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	370	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	225
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.10

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.8
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	210	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	4.05
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	D

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	5.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	68.8	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	490	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	284
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	68.8
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.1
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	1.3		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	278	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.65
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build	Time Analyzed	AM
Project Description	469th to LaMesa	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	2.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.5	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	734	Heavy Vehicle Adjustment Factor (f_{HV})	0.962
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	434
Total Trucks, %	4.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.19

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.5
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	6.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.5		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	417	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.41
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.8	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	240	Heavy Vehicle Adjustment Factor (f_{HV})	0.820
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	166
Total Trucks, %	22.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.07

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.8
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	2.4
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	136	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	11.74
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build	Time Analyzed	PM
Project Description	469th to LaMesa	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	2.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.5	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	351	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	218
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.09

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.5
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.1
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.5		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	199	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	4.80
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	E

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.8	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	666	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	390
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.17

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.8
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	5.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.3		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	378	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.07
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR GREEN INC	Analysis Year	2050
Jurisdiction	SD 38	Time Analyzed	AM
Project Description	2050 Build Analysis - 466th Avenue S/EB Exit Ramp to 468th St	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	4.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.0	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	364	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	221
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.10

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	1.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	207	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	4.05
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	D

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	2.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.5	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	260	Heavy Vehicle Adjustment Factor (f_{HV})	0.901
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	164
Total Trucks, %	11.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.07

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.5
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	2.4
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.5		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	148	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	5.50
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	E

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR GREEN INC	Analysis Year	2050
Jurisdiction	SD 38	Time Analyzed	PM
Project Description	2050 Build Analysis - 466th Avenue S/EB Exit Ramp to 468th St	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	4.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.0	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	312	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	195
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.08

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	2.8
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	1.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	177	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	5.16
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	E

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	2.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.5	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	420	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	255
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.11

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.5
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.7
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.5		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	239	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	4.12
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	D

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build	Time Analyzed	AM
Project Description	I90 WB Ramps to I90 EB Ramps	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	745	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	436
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.19

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	6.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	423	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.13
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	273	Heavy Vehicle Adjustment Factor (f_{HV})	0.877
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	177
Total Trucks, %	14.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.08

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	2.5
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	155	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	6.98
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build	Time Analyzed	PM
Project Description	I90 WB Ramps to I90 EB Ramps	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	451	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	280
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	256	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	4.92
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	E

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	455	Heavy Vehicle Adjustment Factor (f_{HV})	0.877
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	295
Total Trucks, %	14.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.13

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.2
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	259	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	7.24
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build	Time Analyzed	AM
Project Description	Mickelson Rd to 466th St	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.5
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.6	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	725	Heavy Vehicle Adjustment Factor (f_{HV})	0.990
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	416
Total Trucks, %	1.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.18

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	6.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.4		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	412	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.61
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	2.2
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.5	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	425	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	273
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.4
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	3.9
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.6		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	241	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	6.70
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build	Time Analyzed	PM
Project Description	Mickelson Rd to 466th St	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	1.5
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.6	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	445	Heavy Vehicle Adjustment Factor (f_{HV})	0.901
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	280
Total Trucks, %	11.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.6
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.4		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	253	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	5.78
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	2.2
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	69.5	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	913	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	530
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.23

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	69.4
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	7.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.6		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	519	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.97
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build	Time Analyzed	AM
Project Description	466th St to I90 WB Ramps	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	769	Heavy Vehicle Adjustment Factor (f_{HV})	0.980
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	446
Total Trucks, %	2.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.19

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	6.4
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	437	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	2.88
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	436	Heavy Vehicle Adjustment Factor (f_{HV})	0.833
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	298
Total Trucks, %	20.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.13

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.3
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	248	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	10.71
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	F

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HCS Multilane Highway Report

Project Information

Analyst	NM	Date	2/27/2024
Agency	HR Green	Analysis Year	2050
Jurisdiction	SD38 Build	Time Analyzed	PM
Project Description	466th St to I90 WB Ramps	Units	U.S. Customary

Direction 1 Geometric Data

Direction 1	EB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume (V) veh/h	450	Heavy Vehicle Adjustment Factor (f_{HV})	0.917
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	279
Total Trucks, %	9.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.12

Direction 1 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	4.0
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	256	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	4.92
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	E

Direction 2 Geometric Data

Direction 2	WB		
Number of Lanes (N), ln	2	Terrain Type	Level
Measured or Base Free-Flow Speed	Base	Percent Grade, %	-
Base Free-Flow Speed (BFFS), mi/h	70.0	Grade Length, mi	-
Lane Width, ft	12	Access Point Density, pts/mi	0.0
Median Type	Divided	Left-Side Lateral Clearance (LC_R), ft	6
Free-Flow Speed (FFS), mi/h	70.0	Total Lateral Clearance (TLC), ft	12

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume (V) veh/h	910	Heavy Vehicle Adjustment Factor (f_{HV})	0.971
Peak Hour Factor	0.88	Flow Rate (V_p), pc/h/ln	532
Total Trucks, %	3.00	Capacity (c), pc/h/ln	2300
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2300
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.23

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	70.0
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	7.6
Median Type Adjustment (f_M)	0.0	Level of Service (LOS)	A
Access Point Density Adjustment (f_A)	0.0		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}), veh/h	517	Effective Speed Factor (S_t)	5.07
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.23
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	C

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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2050 NB
Jurisdiction	SDDOT	Time Analyzed	AM Peak
Project Description	West of Hartford SD 38 EB	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1069
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	169
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30713	Speed Power Coefficient (p)	0.54838
PF Slope Coefficient (m)	-1.23090	PF Power Coefficient (p)	0.80942
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1069	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	32.4
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	664
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	664	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	35.8
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1871
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	169
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.31694	Speed Power Coefficient (p)	0.54838
PF Slope Coefficient (m)	-1.20586	PF Power Coefficient (p)	0.82063
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1871	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	31.5
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	925
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	925	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	35.8
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4476
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	169
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35043	Speed Power Coefficient (p)	0.54838
PF Slope Coefficient (m)	-1.15155	PF Power Coefficient (p)	0.84082
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4476	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	29.6
Segment Travel Time, minutes	0.74	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	896
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	896	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	35.8
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	743
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	243	Opposing Demand Flow Rate, veh/h	169
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30713	Speed Power Coefficient (p)	0.54838
PF Slope Coefficient (m)	-1.23090	PF Power Coefficient (p)	0.80942
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	743	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	32.4
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	1.2
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	243	Bicycle Effective Width, ft	24
Bicycle LOS Score	3.70	Bicycle Effective Speed Factor	5.07
Bicycle LOS	D		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2717
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	245	Opposing Demand Flow Rate, veh/h	165
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32768	Speed Power Coefficient (p)	0.54983
PF Slope Coefficient (m)	-1.17918	PF Power Coefficient (p)	0.83165
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2717	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	30.7
Segment Travel Time, minutes	0.45	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	245	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.93	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	1013
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	245	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29345	PF Power Coefficient (p)	0.75792
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1013	-	-	68.0

Vehicle Results

Average Speed, mi/h	68.0	Percent Followers, %	36.0
Segment Travel Time, minutes	0.17	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	245	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.93	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4569
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	245	Opposing Demand Flow Rate, veh/h	165
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34958	Speed Power Coefficient (p)	0.54983
PF Slope Coefficient (m)	-1.14981	PF Power Coefficient (p)	0.84100
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	4569	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	29.7
Segment Travel Time, minutes	0.76	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	245	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.93	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5676
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	244	Opposing Demand Flow Rate, veh/h	165
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36055	Speed Power Coefficient (p)	0.54983
PF Slope Coefficient (m)	-1.14222	PF Power Coefficient (p)	0.84066
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5676	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	29.5
Segment Travel Time, minutes	0.94	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	244	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 12

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	657
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	244	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29350	PF Power Coefficient (p)	0.75785
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	657	-	-	68.0

Vehicle Results			
Average Speed, mi/h	68.0	Percent Followers, %	35.9
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	1.3
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	244	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 13

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	6009
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	244	Opposing Demand Flow Rate, veh/h	165
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36364	Speed Power Coefficient (p)	0.54983
PF Slope Coefficient (m)	-1.14089	PF Power Coefficient (p)	0.83997

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6009	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	29.5
Segment Travel Time, minutes	1.00	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	244	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.80	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	891
Measured FFS	Measured	Free-Flow Speed, mi/h	50.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	244	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.14

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	50.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.47375	PF Power Coefficient (p)	0.71164
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	891	-	-	48.0

Vehicle Results

Average Speed, mi/h	48.0	Percent Followers, %	41.8
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	2.1
Vehicle LOS	B		

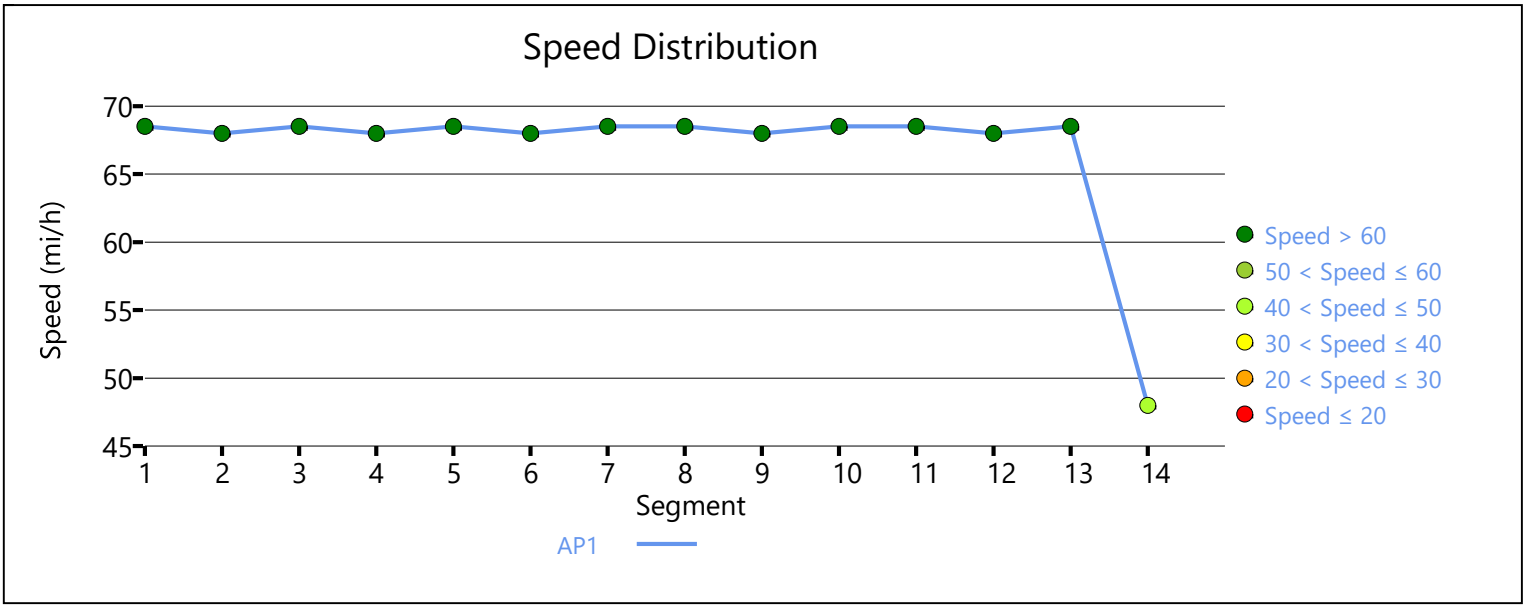
Bicycle Results

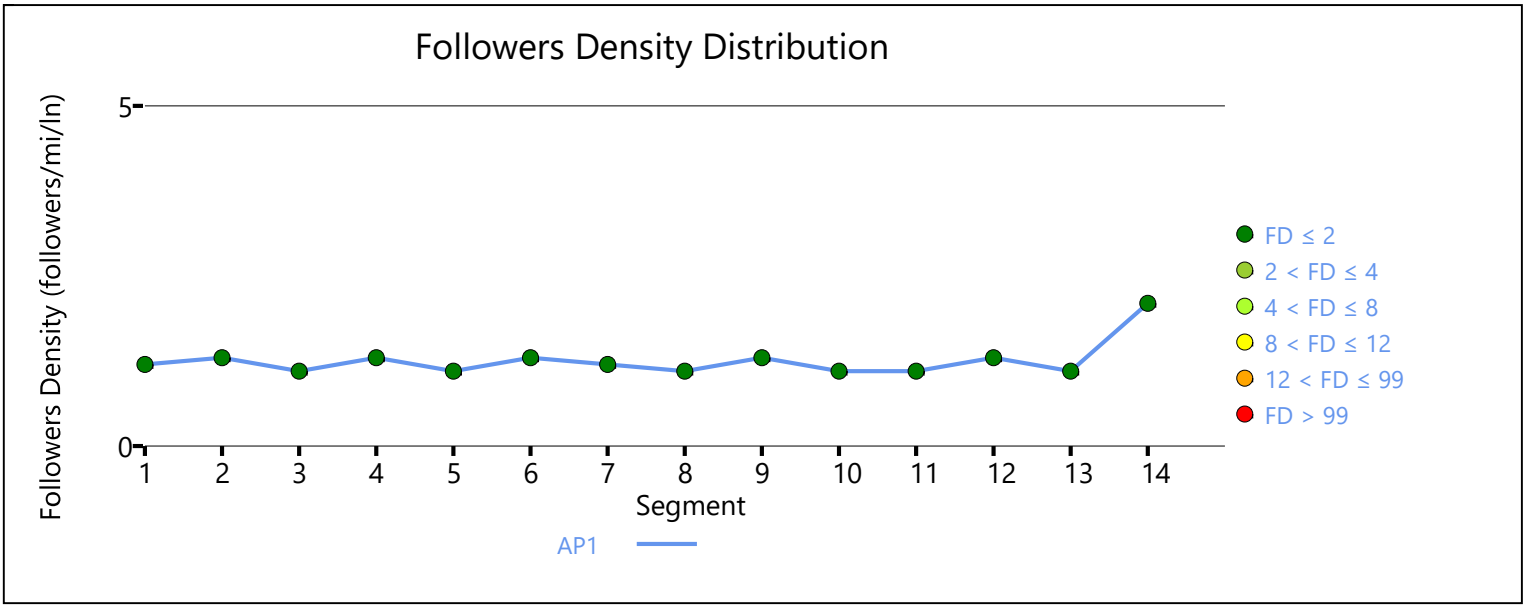
Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	244	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.59	Bicycle Effective Speed Factor	4.42
Bicycle LOS	C		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	327	0.11	1.1	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2050 NB
Jurisdiction	SDDOT	Time Analyzed	PM Peak
Project Description	West of Hartford SD 38 EB	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1069
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	286
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34767	Speed Power Coefficient (p)	0.51808
PF Slope Coefficient (m)	-1.25475	PF Power Coefficient (p)	0.80124
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1069	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	24.8
Segment Travel Time, minutes	0.18	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 2

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	664
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	664	-	-	68.6

Vehicle Results			
Average Speed, mi/h	68.6	Percent Followers, %	27.2
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 3

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	1871
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	286
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35747	Speed Power Coefficient (p)	0.51808
PF Slope Coefficient (m)	-1.22915	PF Power Coefficient (p)	0.81213
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1871	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.9
Segment Travel Time, minutes	0.31	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	925
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	925	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.2
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4476
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	286
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39096	Speed Power Coefficient (p)	0.51808
PF Slope Coefficient (m)	-1.17364	PF Power Coefficient (p)	0.83159
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4476	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	22.2
Segment Travel Time, minutes	0.74	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	896
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29315	PF Power Coefficient (p)	0.75829
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	896	-	-	68.6

Vehicle Results

Average Speed, mi/h	68.6	Percent Followers, %	27.2
Segment Travel Time, minutes	0.15	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 7

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	743
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	157	Opposing Demand Flow Rate, veh/h	286
Peak Hour Factor	0.88	Total Trucks, %	5.79
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.09

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34767	Speed Power Coefficient (p)	0.51808
PF Slope Coefficient (m)	-1.25475	PF Power Coefficient (p)	0.80124
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	743	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	24.8
Segment Travel Time, minutes	0.12	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	157	Bicycle Effective Width, ft	30
Bicycle LOS Score	1.86	Bicycle Effective Speed Factor	5.07
Bicycle LOS	B		

Segment 8

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	2717
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	289
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.37072	Speed Power Coefficient (p)	0.51760
PF Slope Coefficient (m)	-1.20338	PF Power Coefficient (p)	0.82225
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2717	-	-	68.9

Vehicle Results			
Average Speed, mi/h	68.9	Percent Followers, %	23.8
Segment Travel Time, minutes	0.45	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.40	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 9

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1013
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29345	PF Power Coefficient (p)	0.75792
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1013	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.0
Segment Travel Time, minutes	0.17	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.40	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4569
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	289
Peak Hour Factor	0.88	Total Trucks, %	3.28
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39263	Speed Power Coefficient (p)	0.51760
PF Slope Coefficient (m)	-1.17332	PF Power Coefficient (p)	0.83118
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	4569	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	22.9
Segment Travel Time, minutes	0.75	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.40	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 11

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	5676
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	280
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.40080	Speed Power Coefficient (p)	0.51956
PF Slope Coefficient (m)	-1.16417	PF Power Coefficient (p)	0.83135
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	5676	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	22.8
Segment Travel Time, minutes	0.94	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.28	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 12

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	657
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29350	PF Power Coefficient (p)	0.75785
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	657	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.0
Segment Travel Time, minutes	0.11	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.28	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 13

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	6009
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	280
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.40389	Speed Power Coefficient (p)	0.51956
PF Slope Coefficient (m)	-1.16281	PF Power Coefficient (p)	0.83065

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	6009	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	22.8
Segment Travel Time, minutes	0.99	Follower Density (FD), followers/mi/ln	0.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.28	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 14

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	891
Measured FFS	Measured	Free-Flow Speed, mi/h	50.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	164	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.82
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	50.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.47375	PF Power Coefficient (p)	0.71164
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	891	-	-	48.5

Vehicle Results

Average Speed, mi/h	48.5	Percent Followers, %	33.4
Segment Travel Time, minutes	0.21	Follower Density (FD), followers/mi/ln	1.1
Vehicle LOS	A		

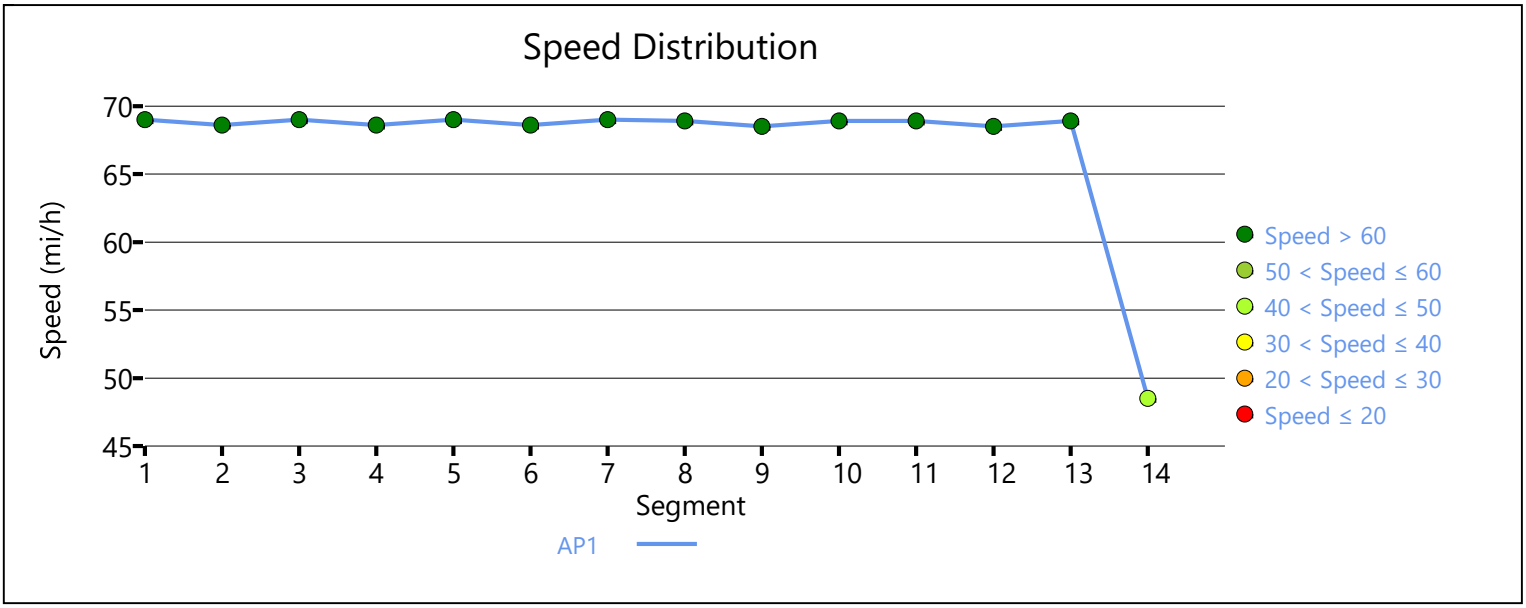
Bicycle Results

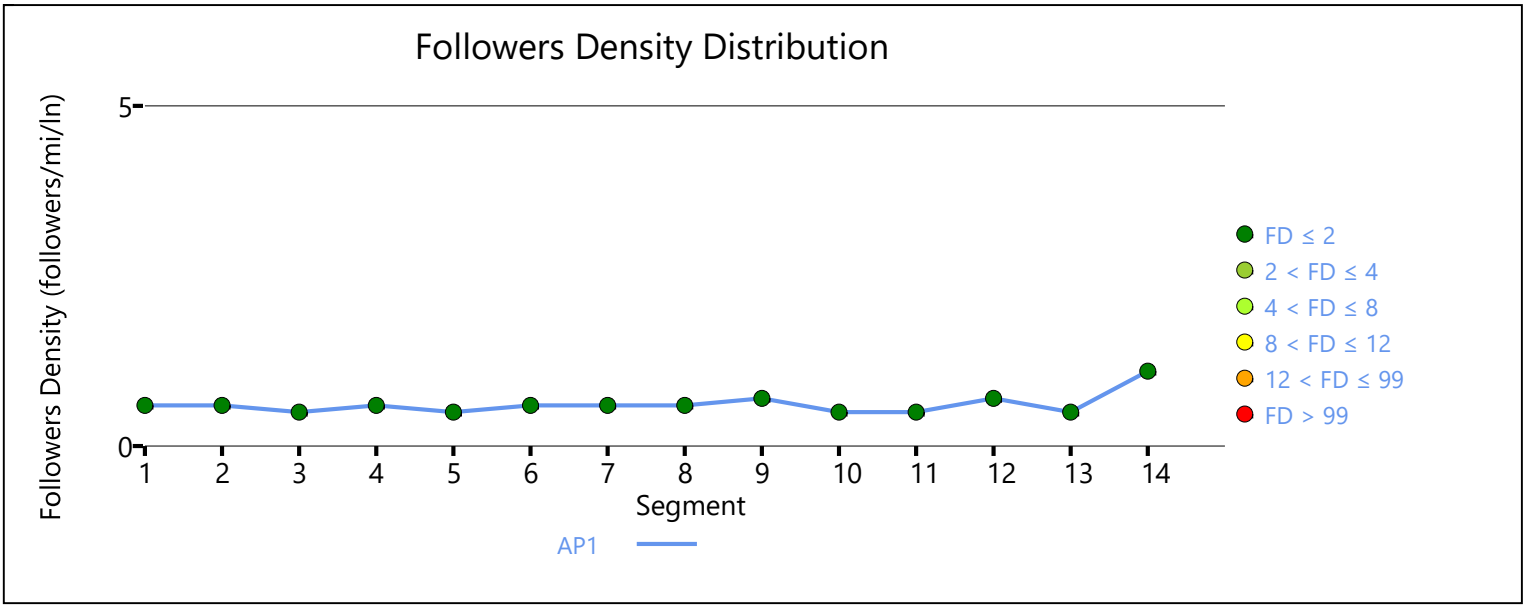
Percent Occupied Parking	0	Pavement Condition Rating	4

Flow Rate Outside Lane, veh/h	164	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.06	Bicycle Effective Speed Factor	4.42
Bicycle LOS	A		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	216	0.05	0.6	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2050 NB
Jurisdiction	SDDOT	Time Analyzed	AM Peak
Project Description	WB 38 West of Hartford	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	10549
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	244
Peak Hour Factor	0.88	Total Trucks, %	12.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.42827	Speed Power Coefficient (p)	0.52768
PF Slope Coefficient (m)	-1.16689	PF Power Coefficient (p)	0.80729
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	10549	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.8
Segment Travel Time, minutes	1.74	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	4.94	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2793
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	244
Peak Hour Factor	0.88	Total Trucks, %	12.50
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.35767	Speed Power Coefficient (p)	0.52768
PF Slope Coefficient (m)	-1.19319	PF Power Coefficient (p)	0.82737
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2793	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.5
Segment Travel Time, minutes	0.46	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	4.94	Bicycle Effective Speed Factor	5.07
Bicycle LOS	E		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3825
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	245
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.37079	Speed Power Coefficient (p)	0.52741
PF Slope Coefficient (m)	-1.17529	PF Power Coefficient (p)	0.83222
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3825	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.1
Segment Travel Time, minutes	0.63	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	791
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29355	PF Power Coefficient (p)	0.75779
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	791	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.1
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3414
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	245
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.36595	Speed Power Coefficient (p)	0.52741
PF Slope Coefficient (m)	-1.18179	PF Power Coefficient (p)	0.83026
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3414	-	-	69.0

Vehicle Results

Average Speed, mi/h	69.0	Percent Followers, %	23.2
Segment Travel Time, minutes	0.56	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	286
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	165	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.40
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29355	PF Power Coefficient (p)	0.75779
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	286	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.1
Segment Travel Time, minutes	0.05	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	165	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.17	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	463
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29353	PF Power Coefficient (p)	0.75782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	463	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.6
Segment Travel Time, minutes	0.08	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 8

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	4822
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	243
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.38079	Speed Power Coefficient (p)	0.52796
PF Slope Coefficient (m)	-1.16377	PF Power Coefficient (p)	0.83451
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4822	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	23.2
Segment Travel Time, minutes	0.79	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 9

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	861
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29353	PF Power Coefficient (p)	0.75782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	861	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.6
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1556
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	243
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33831	Speed Power Coefficient (p)	0.52796
PF Slope Coefficient (m)	-1.23554	PF Power Coefficient (p)	0.80871
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1556	-	-	68.9

Vehicle Results

Average Speed, mi/h	68.9	Percent Followers, %	25.5
Segment Travel Time, minutes	0.26	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	799
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29353	PF Power Coefficient (p)	0.75782
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	799	-	-	68.5

Vehicle Results

Average Speed, mi/h	68.5	Percent Followers, %	28.6
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	0.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 12

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	857
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	243
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33390	Speed Power Coefficient (p)	0.52796
PF Slope Coefficient (m)	-1.24754	PF Power Coefficient (p)	0.80350
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	857	-	-	68.9

Vehicle Results			
Average Speed, mi/h	68.9	Percent Followers, %	25.9
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.23	Bicycle Effective Speed Factor	5.07
Bicycle LOS	A		

Segment 13

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1288
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	169	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.60
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.10

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39677	PF Power Coefficient (p)	0.73640

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.9
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1288	-	-	58.5

Vehicle Results

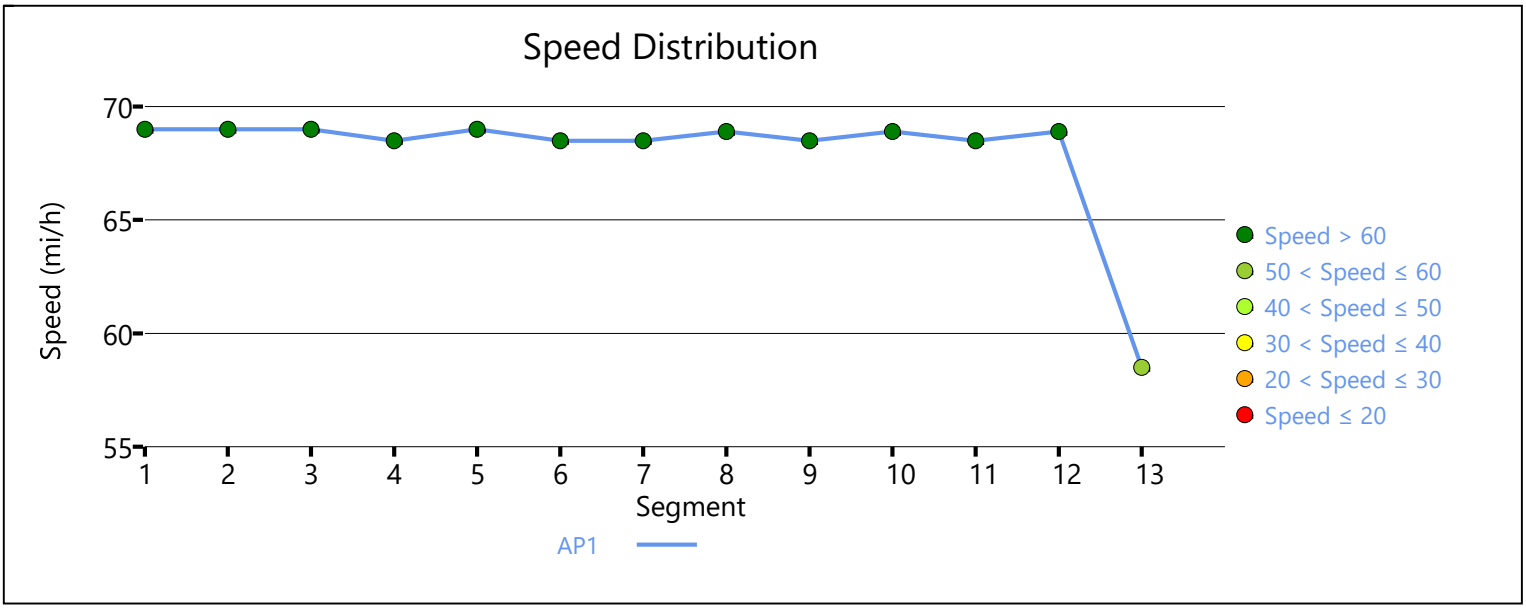
Average Speed, mi/h	58.5	Percent Followers, %	31.5
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	0.9
Vehicle LOS	A		

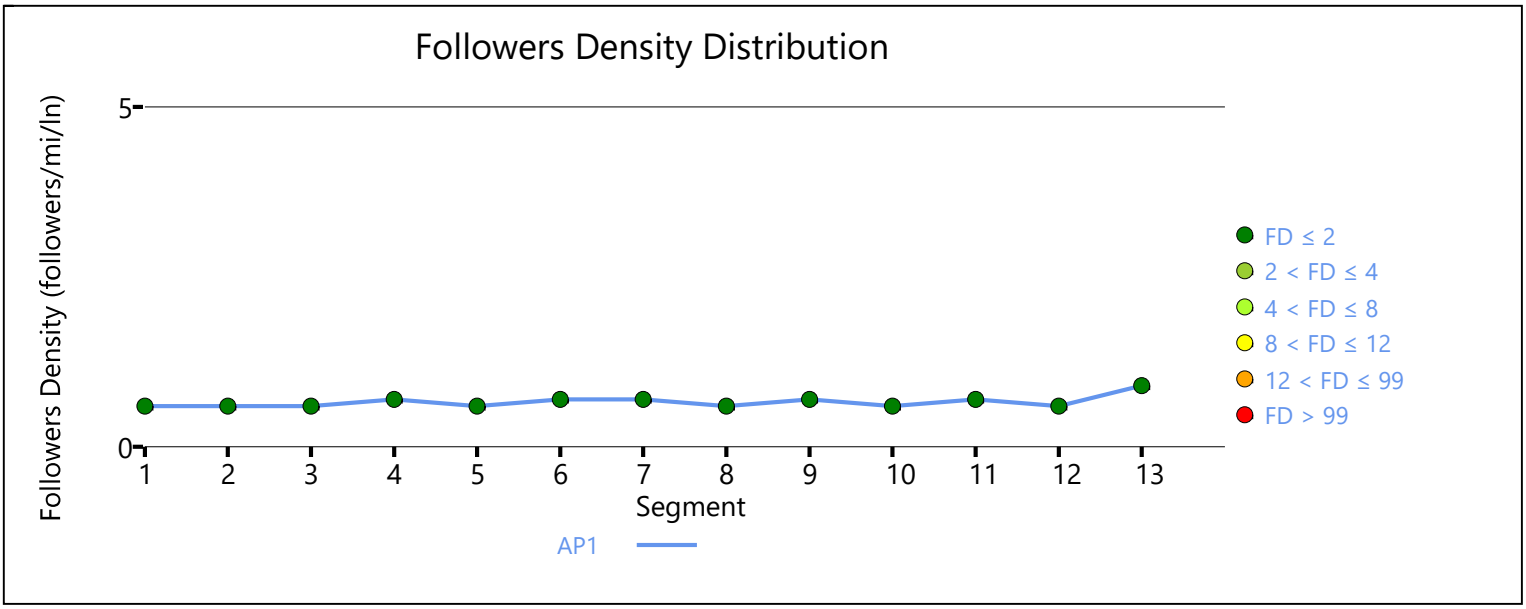
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	169	Bicycle Effective Width, ft	29
Bicycle LOS Score	1.14	Bicycle Effective Speed Factor	4.79
Bicycle LOS	A		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	224	0.05	0.6	A





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HCS Two-Lane Highway Report

Project Information

Analyst	MJV	Date	5/11/2023
Agency	HRG	Analysis Year	2050 NB
Jurisdiction	SDDOT	Time Analyzed	PM Peak
Project Description	WB 38 West of Hartford	Units	U.S. Customary

Segment 1

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	10549
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	280	Opposing Demand Flow Rate, veh/h	164
Peak Hour Factor	0.88	Total Trucks, %	1.94
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.39885	Speed Power Coefficient (p)	0.55020
PF Slope Coefficient (m)	-1.15143	PF Power Coefficient (p)	0.81244
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	10549	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	33.6
Segment Travel Time, minutes	1.76	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	280	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.64	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 2

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	2793
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	280	Opposing Demand Flow Rate, veh/h	164
Peak Hour Factor	0.88	Total Trucks, %	1.94
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.16

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.32824	Speed Power Coefficient (p)	0.55020
PF Slope Coefficient (m)	-1.17723	PF Power Coefficient (p)	0.83227
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	2793	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	33.5
Segment Travel Time, minutes	0.46	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	280	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.64	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 3

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3825
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	289	Opposing Demand Flow Rate, veh/h	164
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34098	Speed Power Coefficient (p)	0.55020
PF Slope Coefficient (m)	-1.15833	PF Power Coefficient (p)	0.83897
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3825	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	33.5
Segment Travel Time, minutes	0.64	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	289	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 4

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	791
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	289	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29358	PF Power Coefficient (p)	0.75776
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	791	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.6
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	289	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 5

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	3414
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	289	Opposing Demand Flow Rate, veh/h	164
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.33614	Speed Power Coefficient (p)	0.55020
PF Slope Coefficient (m)	-1.16472	PF Power Coefficient (p)	0.83695
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	3414	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	33.7
Segment Travel Time, minutes	0.57	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	289	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 6

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	286
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	289	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	2.19
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0

Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29358	PF Power Coefficient (p)	0.75776
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	286	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.6
Segment Travel Time, minutes	0.05	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	289	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.72	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 7

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	463
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29347	PF Power Coefficient (p)	0.75789
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	463	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.4
Segment Travel Time, minutes	0.08	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 8

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	4822
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	157
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.34895	Speed Power Coefficient (p)	0.55243
PF Slope Coefficient (m)	-1.14563	PF Power Coefficient (p)	0.84199
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	4822	-	-	68.3

Vehicle Results			
Average Speed, mi/h	68.3	Percent Followers, %	33.0
Segment Travel Time, minutes	0.80	Follower Density (FD), followers/mi/ln	1.4
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 9

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	861
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29347	PF Power Coefficient (p)	0.75789
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	861	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.4
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 10

Vehicle Inputs

Segment Type	Passing Zone	Length, ft	1556
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	157
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30647	Speed Power Coefficient (p)	0.55243
PF Slope Coefficient (m)	-1.21611	PF Power Coefficient (p)	0.81541
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h

1	Tangent	1556	-	-	68.3

Vehicle Results

Average Speed, mi/h	68.3	Percent Followers, %	35.5
Segment Travel Time, minutes	0.26	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 11

Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	799
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity

Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.29347	PF Power Coefficient (p)	0.75789
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.7
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	799	-	-	67.7

Vehicle Results

Average Speed, mi/h	67.7	Percent Followers, %	39.4
Segment Travel Time, minutes	0.13	Follower Density (FD), followers/mi/ln	1.7
Vehicle LOS	A		

Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 12

Vehicle Inputs			
Segment Type	Passing Zone	Length, ft	857
Measured FFS	Measured	Free-Flow Speed, mi/h	70.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	157
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	70.0
Speed Slope Coefficient (m)	4.30206	Speed Power Coefficient (p)	0.55243
PF Slope Coefficient (m)	-1.22789	PF Power Coefficient (p)	0.81007
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	1.5
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data					
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	857	-	-	68.3

Vehicle Results			
Average Speed, mi/h	68.3	Percent Followers, %	36.0
Segment Travel Time, minutes	0.14	Follower Density (FD), followers/mi/ln	1.5
Vehicle LOS	A		

Bicycle Results			
Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.95	Bicycle Effective Speed Factor	5.07
Bicycle LOS	C		

Segment 13

Vehicle Inputs			
Segment Type	Passing Constrained	Length, ft	1288
Measured FFS	Measured	Free-Flow Speed, mi/h	60.0

Demand and Capacity			
Directional Demand Flow Rate, veh/h	286	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.88	Total Trucks, %	3.08
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.17

Intermediate Results			
Segment Vertical Class	1	Free-Flow Speed, mi/h	60.0
Speed Slope Coefficient (m)	4.57372	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39671	PF Power Coefficient (p)	0.73647

In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	2.1
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	1288	-	-	57.7

Vehicle Results

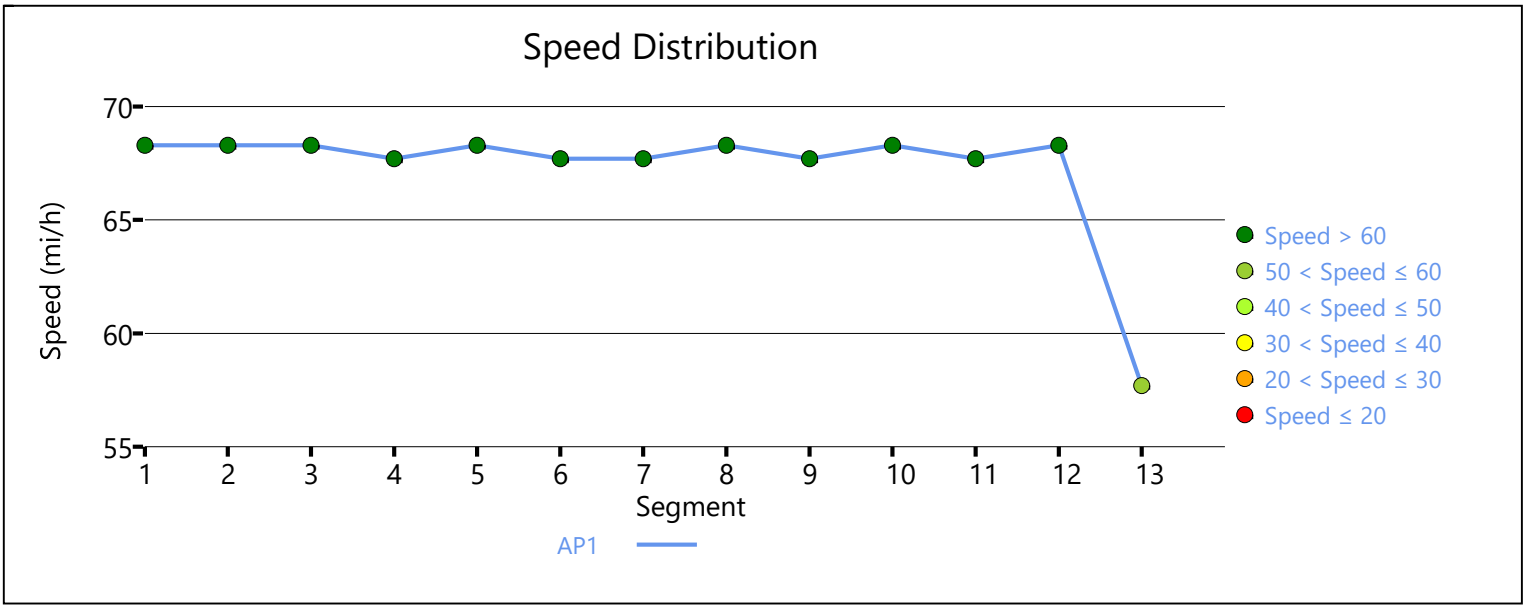
Average Speed, mi/h	57.7	Percent Followers, %	42.7
Segment Travel Time, minutes	0.25	Follower Density (FD), followers/mi/ln	2.1
Vehicle LOS	B		

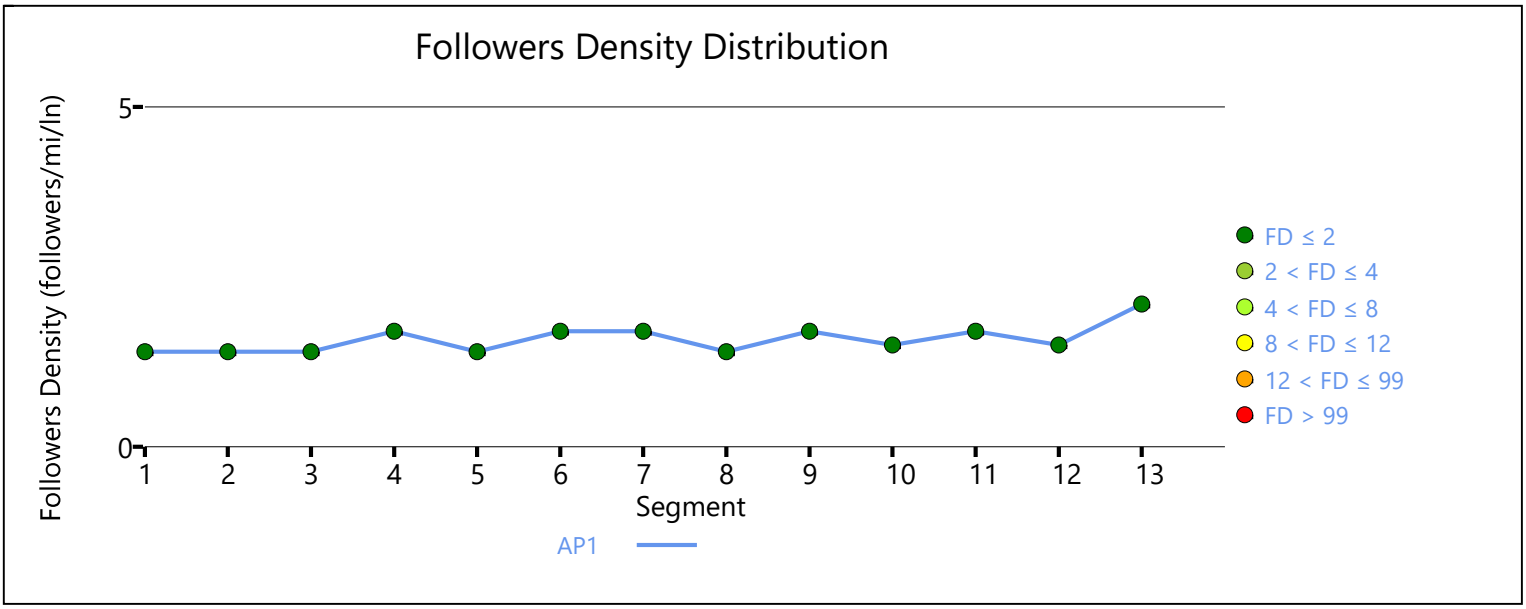
Bicycle Results

Percent Occupied Parking	0	Pavement Condition Rating	4
Flow Rate Outside Lane, veh/h	286	Bicycle Effective Width, ft	24
Bicycle LOS Score	2.86	Bicycle Effective Speed Factor	4.79
Bicycle LOS	C		

Facility Results

T	VMT veh-mi/p	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	382	0.15	1.5	A





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HCS Two-Way Stop-Control Report

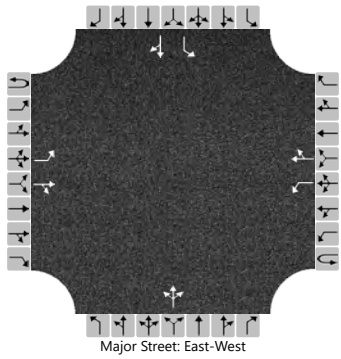
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & SD 19
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	SD 19
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		1	1	0
Configuration		L		TR		L		TR			LTR			L		TR
Volume (veh/h)		55	165	0		0	120	50		10	5	10		70	0	95
Percent Heavy Vehicles (%)		30				3				3	3	3		9	3	11
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.40				4.13				7.13	6.53	6.23		7.19	6.53	6.31
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.47				2.23				3.53	4.03	3.33		3.58	4.03	3.40

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		60				0					27			76		103
Capacity, c (veh/h)		1238				1390					524			461		865
v/c Ratio		0.05				0.00					0.05			0.16		0.12
95% Queue Length, Q_{95} (veh)		0.2				0.0					0.2			0.6		0.4
Control Delay (s/veh)		8.1	0.2	0.2		7.6	0.0	0.0			12.2			14.3		9.7
Level of Service (LOS)		A	A	A		A	A	A			B			B		A
Approach Delay (s/veh)	2.2				0.0				12.2				11.7			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

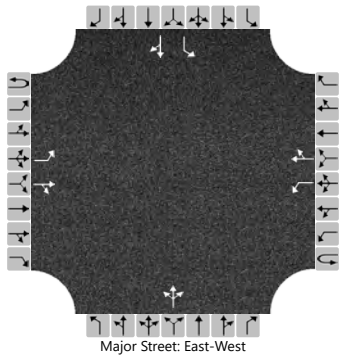
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & SD 19
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	SD 19
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		1	1	0
Configuration		L		TR		L		TR			LTR			L		TR
Volume (veh/h)		85	115	0		0	170	80		10	5	10		40	0	50
Percent Heavy Vehicles (%)		2				3				3	3	3		10	3	14
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.12				4.13				7.13	6.53	6.23		7.20	6.53	6.34
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.23				3.53	4.03	3.33		3.59	4.03	3.43

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		92				0					27			43		54
Capacity, c (veh/h)		1291				1455					498			395		782
v/c Ratio		0.07				0.00					0.05			0.11		0.07
95% Queue Length, Q_{95} (veh)		0.2				0.0					0.2			0.4		0.2
Control Delay (s/veh)		8.0	0.2	0.2		7.5	0.0	0.0			12.6			15.2		9.9
Level of Service (LOS)		A	A	A		A	A	A			B			C		A
Approach Delay (s/veh)		3.5				0.0				12.6				12.3		
Approach LOS		A				A				B				B		

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HCS Two-Way Stop-Control Report

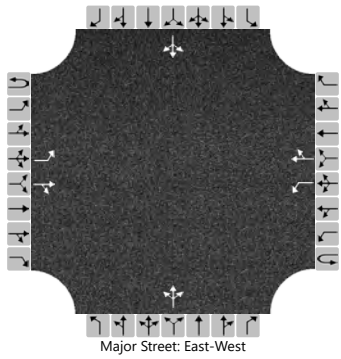
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 459th
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	459th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		0	215	7		2	155	0		15	0	7		9	0	0
Percent Heavy Vehicles (%)		3				3				13	0	0		0	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.23	6.50	6.20		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.62	4.00	3.30		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				2					24				10	
Capacity, c (veh/h)		1403				1319					596				546	
v/c Ratio		0.00				0.00					0.04				0.02	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.1				0.1	
Control Delay (s/veh)		7.6	0.0	0.0		7.7	0.0	0.0			11.3				11.7	
Level of Service (LOS)		A	A	A		A	A	A			B				B	
Approach Delay (s/veh)	0.0				0.1				11.3				11.7			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

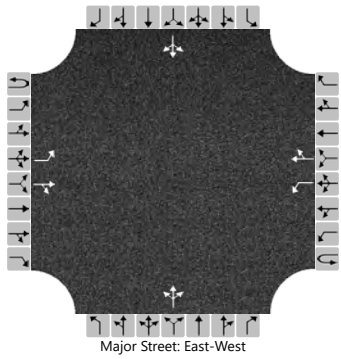
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 459th
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	459th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		0	145	9		15	245	2		15	0	4		2	2	0
Percent Heavy Vehicles (%)		0				0				13	0	0		0	100	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.23	6.50	6.20		7.10	7.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.62	4.00	3.30		3.50	4.90	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				16					21				4	
Capacity, c (veh/h)		1307				1423					534				427	
v/c Ratio		0.00				0.01					0.04				0.01	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.1				0.0	
Control Delay (s/veh)		7.8	0.0	0.0		7.6	0.1	0.1			12.0				13.5	
Level of Service (LOS)		A	A	A		A	A	A			B				B	
Approach Delay (s/veh)	0.0				0.5				12.0				13.5			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

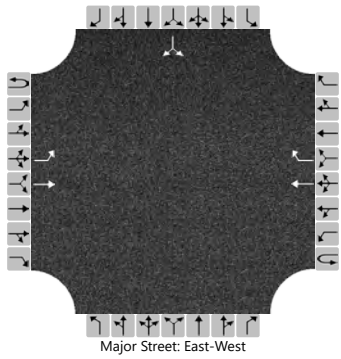
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 Speedway
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 Expressway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		L	T				T	R							LR	
Volume (veh/h)		0	230				165	0						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized						No										
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													0	
Capacity, c (veh/h)		1390													0	
v/c Ratio		0.00														
95% Queue Length, Q_{95} (veh)		0.0														
Control Delay (s/veh)		7.6	0.0													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)		0.0														
Approach LOS		A														

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HCS Two-Way Stop-Control Report

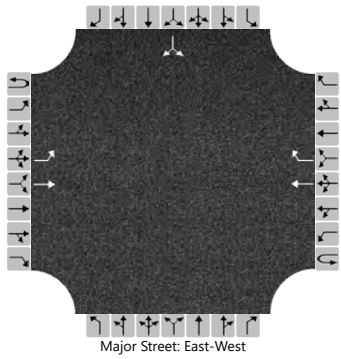
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak - Event Traffic
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 Speedway
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 Expressway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		L	T				T	R							LR	
Volume (veh/h)		0	412				295	0						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized						No										
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													0	
Capacity, c (veh/h)		1234													0	
v/c Ratio		0.00														
95% Queue Length, Q_{95} (veh)		0.0														
Control Delay (s/veh)		7.9	0.0													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)		0.0														
Approach LOS		A														

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HCS Two-Way Stop-Control Report

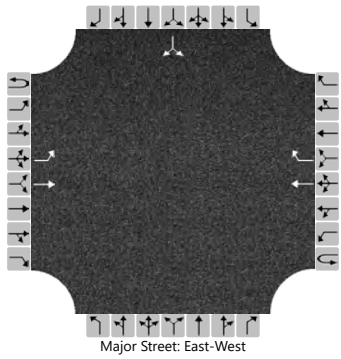
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 Speedway
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 Expressway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		L	T				T	R							LR	
Volume (veh/h)		0	165				260	0						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized						No										
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													0	
Capacity, c (veh/h)		1274													0	
v/c Ratio		0.00														
95% Queue Length, Q_{95} (veh)		0.0														
Control Delay (s/veh)		7.8	0.0													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)		0.0														
Approach LOS		A														

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HCS Two-Way Stop-Control Report

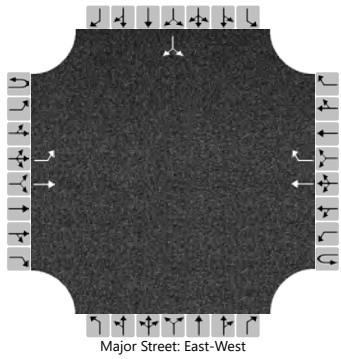
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak - Event Traffic
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 Speedway
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 Expressway
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		0	1	0
Configuration		L	T				T	R							LR	
Volume (veh/h)		0	295				465	0						0		0
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													0	
Capacity, c (veh/h)		1054													0	
v/c Ratio		0.00														
95% Queue Length, Q_{95} (veh)		0.0														
Control Delay (s/veh)		8.4	0.0													
Level of Service (LOS)		A	A													
Approach Delay (s/veh)		0.0														
Approach LOS		A														

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HCS Two-Way Stop-Control Report

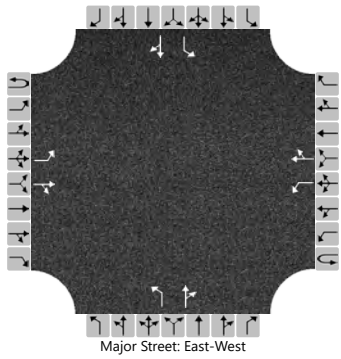
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/29/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 463rd Ave / Western Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	463rd Ave / Western Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		1	1	0		1	1	0
Configuration		L		TR		L		TR		L		TR		L		TR
Volume (veh/h)		9	180	80		60	110	30		65	75	90		40	80	5
Percent Heavy Vehicles (%)		3				3				14	2	6		0	7	33
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.13				4.13				7.24	6.52	6.26		7.10	6.57	6.53
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.23				3.63	4.02	3.35		3.50	4.06	3.60

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		10				65				71		179		43		92
Capacity, c (veh/h)		1422				1274				307		566		274		414
v/c Ratio		0.01				0.05				0.23		0.32		0.16		0.22
95% Queue Length, Q_{95} (veh)		0.0				0.2				0.9		1.4		0.6		0.8
Control Delay (s/veh)		7.5	0.0	0.0		8.0	0.2	0.2		20.2		14.3		20.6		16.2
Level of Service (LOS)		A	A	A		A	A	A		C		B		C		C
Approach Delay (s/veh)	0.3				2.5				16.0				17.6			
Approach LOS	A				A				C				C			

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HCS Two-Way Stop-Control Report

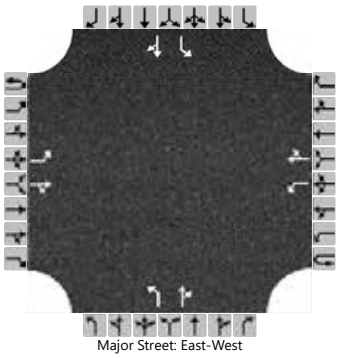
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 463rd Ave / Western Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	463rd Ave / Western Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		1	1	0		1	1	0
Configuration		L		TR		L		TR		L		TR		L		TR
Volume (veh/h)		15	125	55		120	200	60		70	85	155		55	100	25
Percent Heavy Vehicles (%)		22				3				0	11	4		0	4	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.32				4.13				7.10	6.61	6.24		7.10	6.54	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.40				2.23				3.50	4.10	3.34		3.50	4.04	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		16				130				76		261		60		136
Capacity, c (veh/h)		1173				1371				183		518		148		349
v/c Ratio		0.01				0.10				0.42		0.50		0.41		0.39
95% Queue Length, Q_{95} (veh)		0.0				0.3				1.9		2.8		1.8		1.8
Control Delay (s/veh)		8.1	0.1	0.1		7.9	0.3	0.3		38.1		18.8		45.1		21.8
Level of Service (LOS)		A	A	A		A	A	A		E		C		E		C
Approach Delay (s/veh)	0.7				2.7				23.1				28.9			
Approach LOS	A				A				C				D			

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HCS Two-Way Stop-Control Report

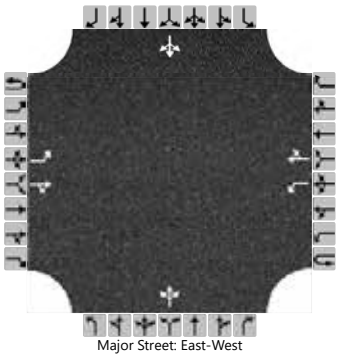
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Main Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Main Ave (9th St)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		2	260	30		40	195	20		40	5	85		6	10	4
Percent Heavy Vehicles (%)		0				11				5	0	2		0	17	0
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized																
Median Type | Storage	Left Only								9							

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.21				7.15	6.50	6.22		7.10	6.67	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.30				3.55	4.00	3.32		3.50	4.15	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2				43					141				22	
Capacity, c (veh/h)		1346				1196					678				459	
v/c Ratio		0.00				0.04					0.21				0.05	
95% Queue Length, Q_{95} (veh)		0.0				0.1					0.8				0.1	
Control Delay (s/veh)		7.7				8.1					11.7				13.2	
Level of Service (LOS)		A				A					B				B	
Approach Delay (s/veh)	0.1				1.3				11.7				13.2			
Approach LOS	A				A				B				B			

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HCS Two-Way Stop-Control Report

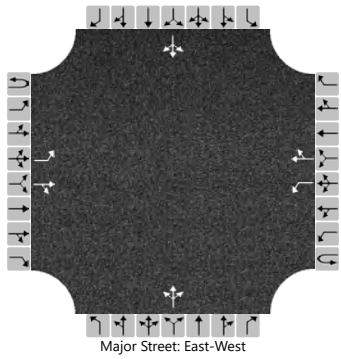
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Main Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Main Ave (9th St)
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume (veh/h)		10	250	45		65	335	60		35	20	55		40	30	7
Percent Heavy Vehicles (%)		0				0				5	0	0		0	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage		Left Only								9						

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.15	6.50	6.20		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.55	4.00	3.30		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		11				71					120				84	
Capacity, c (veh/h)		1141				1251					467				368	
v/c Ratio		0.01				0.06					0.26				0.23	
95% Queue Length, Q_{95} (veh)		0.0				0.2					1.0				0.9	
Control Delay (s/veh)		8.2				8.1					15.3				17.6	
Level of Service (LOS)		A				A					C				C	
Approach Delay (s/veh)	0.3				1.1				15.3				17.6			
Approach LOS	A				A				C				C			

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HCS Two-Way Stop-Control Report

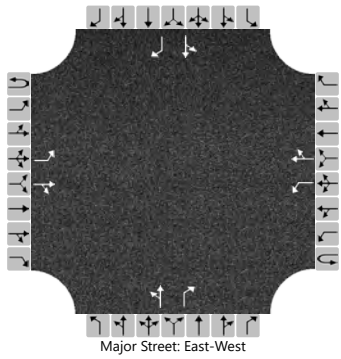
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Vandemark Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Vandemark Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	1		0	1	1
Configuration		L		TR		L		TR		LT		R		LT		R
Volume (veh/h)		25	370	10		8	240	25		9	5	10		40	2	25
Percent Heavy Vehicles (%)		0				0				40	0	0		0	0	7
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized										No				No		
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.50	6.50	6.20		7.10	6.50	6.27
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.86	4.00	3.30		3.50	4.00	3.36

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		27				9				15		11		46		27
Capacity, c (veh/h)		1286				1157				278		648		306		752
v/c Ratio		0.02				0.01				0.05		0.02		0.15		0.04
95% Queue Length, Q_{95} (veh)		0.1				0.0				0.2		0.1		0.5		0.1
Control Delay (s/veh)		7.9	0.1	0.1		8.1	0.1	0.1		18.7		10.7		18.8		10.0
Level of Service (LOS)		A	A	A		A	A	A		C		B		C		A
Approach Delay (s/veh)		0.6				0.3				15.4				15.5		
Approach LOS		A				A				C				C		

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HCS Two-Way Stop-Control Report

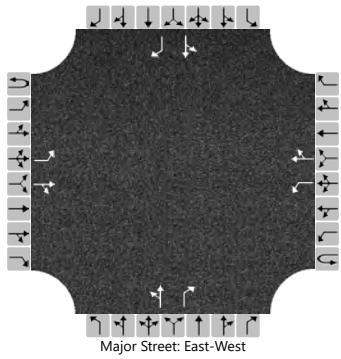
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Vandemark Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Vandemark Avenue
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	1		0	1	1
Configuration		L		TR		L		TR		LT		R		LT		R
Volume (veh/h)		20	255	4		5	475	45		0	0	9		30	0	25
Percent Heavy Vehicles (%)		0				0				0	0	100		0	0	7
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized										No				No		
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	7.20		7.10	6.50	6.27
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	4.20		3.50	4.00	3.36

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		22				5				0		10		33		27
Capacity, c (veh/h)		1017				1293				0		574		259		532
v/c Ratio		0.02				0.00						0.02		0.13		0.05
95% Queue Length, Q_{95} (veh)		0.1				0.0						0.1		0.4		0.2
Control Delay (s/veh)		8.6	0.2	0.2		7.8	0.0	0.0				11.4		20.9		12.1
Level of Service (LOS)		A	A	A		A	A	A				B		C		B
Approach Delay (s/veh)	0.8				0.1								16.9			
Approach LOS	A				A								C			

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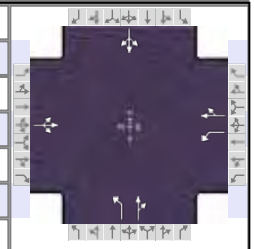
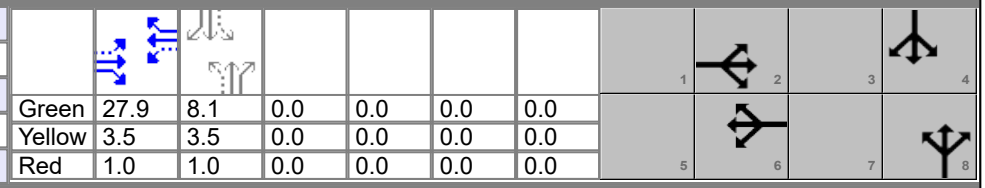
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & 2nd Street	File Name	(7) SD38&2nd_AM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	20	325	10	95	200	15	5	20	155	35	50	25

Signal Information			
Cycle, s	45.0	Reference Phase	6
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	27.9	8.1	0.0	0.0	0.0	0.0						
Yellow	3.5	3.5	0.0	0.0	0.0	0.0						
Red	1.0	1.0	0.0	0.0	0.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		6.0		6.0		8.0
Phase Duration, s		32.4		32.4		12.6		12.6
Change Period, ($Y+R_c$), s		4.5		4.5		4.5		4.5
Max Allow Headway (*MAH*), s		0.0		0.0		3.3		3.3
Queue Clearance Time (g_s), s						7.8		7.5
Green Extension Time (g_e), s		0.0		0.0		0.5		0.5
Phase Call Probability						0.98		0.98
Max Out Probability						0.01		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h		386		103	234		5	190			120	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1743		1018	1750		1317	1528			1105	
Queue Service Time (g_s), s		0.0		2.5	2.6		0.2	5.2			0.2	
Cycle Queue Clearance Time (g_c), s		4.8		7.3	2.6		5.8	5.2			5.5	
Green Ratio (*g/C*)		0.62		0.62	0.62		0.18	0.18			0.18	
Capacity (*c*), veh/h		1162		681	1082		236	278			306	
Volume-to-Capacity Ratio (*X*)		0.332		0.152	0.216		0.023	0.685			0.391	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)		1.9		0.8	1.1		0.1	2.9			1.7	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00		0.08	0.00		0.02	0.00			0.00	
Uniform Delay (d_1), s/veh		4.2		6.0	3.8		20.1	17.2			16.3	
Incremental Delay (d_2), s/veh		0.8		0.5	0.5		0.0	1.1			0.3	
Initial Queue Delay (d_3), s/veh		0.0		0.0	0.0		0.0	0.0			0.0	
Control Delay (*d*), s/veh		5.0		6.4	4.2		20.1	18.3			16.6	
Level of Service (LOS)		A		A	A		C	B			B	
Approach Delay, s/veh / LOS	5.0	A		4.9	A		18.4	B		16.6	B	
Intersection Delay, s/veh / LOS	8.8						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.84	B	1.62	B	1.91	B	1.68	B
Bicycle LOS Score / LOS	1.12	A	1.04	A	0.81	A	0.68	A

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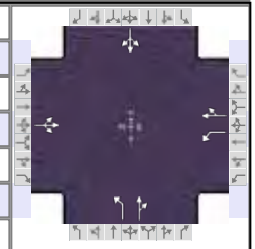
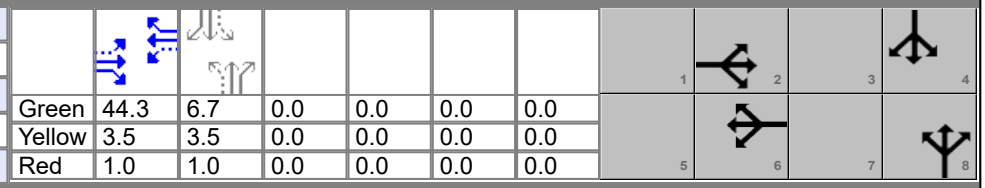
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	PM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & 2nd Street	File Name	(7) SD38&2nd_PM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	25	235	9	130	490	25	15	25	65	15	30	20

Signal Information			
Cycle, s	60.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On



Green	44.3	6.7	0.0	0.0	0.0	0.0						
Yellow	3.5	3.5	0.0	0.0	0.0	0.0						
Red	1.0	1.0	0.0	0.0	0.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2		6		8		4
Case Number		8.0		6.0		6.0		8.0
Phase Duration, s		48.8		48.8		11.2		11.2
Change Period, ($Y+R_c$), s		4.5		4.5		4.5		4.5
Max Allow Headway (*MAH*), s		0.0		0.0		3.2		3.2
Queue Clearance Time (g_s), s						6.2		5.6
Green Extension Time (g_e), s		0.0		0.0		0.3		0.3
Phase Call Probability						0.95		0.95
Max Out Probability						0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h		292		141	560		16	98			71	
Adjusted Saturation Flow Rate (*s*), veh/h/ln		1663		1114	1757		1350	1568			1377	
Queue Service Time (g_s), s		0.0		2.7	7.3		0.7	3.5			0.0	
Cycle Queue Clearance Time (g_c), s		3.1		5.9	7.3		4.2	3.5			3.6	
Green Ratio (*g/C*)		0.74		0.74	0.74		0.11	0.11			0.11	
Capacity (*c*), veh/h		1294		885	1298		190	175			227	
Volume-to-Capacity Ratio (*X*)		0.226		0.160	0.431		0.086	0.560			0.311	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)		1.0		0.8	2.5		0.4	2.3			1.6	
Queue Storage Ratio (*RQ*) (95 th percentile)		0.00		0.08	0.00		0.07	0.00			0.00	
Uniform Delay (d_1), s/veh		2.5		3.4	3.0		27.3	25.3			24.7	
Incremental Delay (d_2), s/veh		0.4		0.4	1.0		0.1	1.0			0.3	
Initial Queue Delay (d_3), s/veh		0.0		0.0	0.0		0.0	0.0			0.0	
Control Delay (*d*), s/veh		2.9		3.8	4.1		27.4	26.3			25.0	
Level of Service (LOS)		A		A	A		C	C			C	
Approach Delay, s/veh / LOS	2.9	A		4.0	A		26.5	C		25.0	C	
Intersection Delay, s/veh / LOS	7.2						A					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.83	B	1.60	B	1.92	B	1.70	B
Bicycle LOS Score / LOS	0.97	A	1.64	B	0.68	A	0.60	A

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HCS Two-Way Stop-Control Report

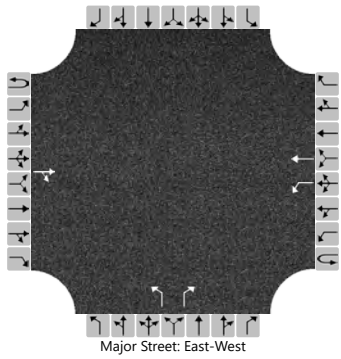
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & West Central HS Entrance
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	West Central HS Entrance
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		1	0	1		0	0	0
Configuration				TR		L	T			L		R				
Volume (veh/h)			425	90		55	285			35		50				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage			Left Only							9						

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						60				38		54				
Capacity, c (veh/h)						1021				576		567				
v/c Ratio						0.06				0.07		0.10				
95% Queue Length, Q_{95} (veh)						0.2				0.2		0.3				
Control Delay (s/veh)						8.7				11.7		12.0				
Level of Service (LOS)						A				B		B				
Approach Delay (s/veh)						1.4				11.9						
Approach LOS						A				B						

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HCS Two-Way Stop-Control Report

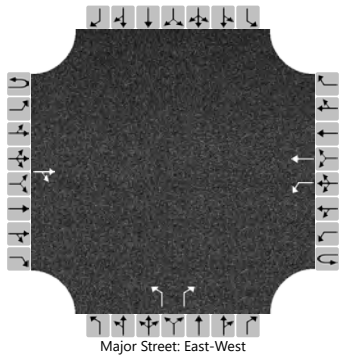
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & West Central HS Entrance
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	West Central HS Entrance
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		1	0	1		0	0	0
Configuration				TR		L	T			L		R				
Volume (veh/h)			305	4		4	620			15		15				
Percent Heavy Vehicles (%)						0				0		0				
Proportion Time Blocked																
Percent Grade (%)										0						
Right Turn Channelized										No						
Median Type | Storage			Left Only							9						

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.1		6.2				
Critical Headway (sec)						4.10				6.40		6.20				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.20				3.50		3.30				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						4				16		16				
Capacity, c (veh/h)						1235				500		713				
v/c Ratio						0.00				0.03		0.02				
95% Queue Length, Q_{95} (veh)						0.0				0.1		0.1				
Control Delay (s/veh)						7.9				12.4		10.2				
Level of Service (LOS)						A				B		B				
Approach Delay (s/veh)						0.1				11.3						
Approach LOS						A				B						

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HCS Two-Way Stop-Control Report

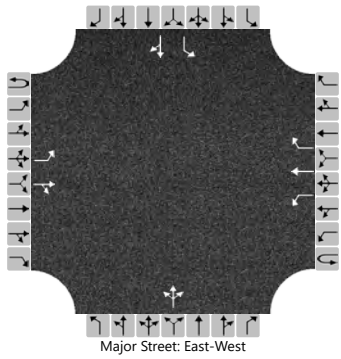
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Railroad Street
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Railroad St
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		0	1	0		1	1	0
Configuration		L		TR		L	T	R			LTR			L		TR
Volume (veh/h)		4	465	0		15	270	95		2	0	30		145	4	5
Percent Heavy Vehicles (%)		0				0				0	0	15		0	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized						No										
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.10				7.10	6.50	6.35		7.10	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.44		3.50	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		4				16					35			158		10
Capacity, c (veh/h)		1173				1070					505			258		448
v/c Ratio		0.00				0.02					0.07			0.61		0.02
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.2			3.6		0.1
Control Delay (s/veh)		8.1	0.0	0.0		8.4	0.1				12.6			38.6		13.2
Level of Service (LOS)		A	A	A		A	A				B			E		B
Approach Delay (s/veh)	0.1				0.4				12.6				37.1			
Approach LOS	A				A				B				E			

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HCS Two-Way Stop-Control Report

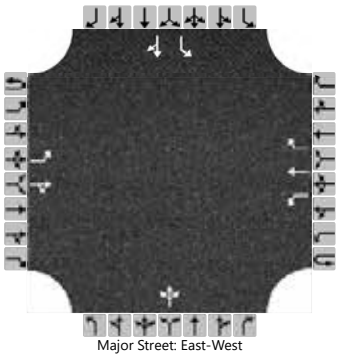
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/29/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & Railroad Street
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	Railroad St
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	1		0	1	0		1	1	0
Configuration		L		TR		L	T	R			LTR			L		TR
Volume (veh/h)		4	340	4		15	560	155		2	2	15		85	9	5
Percent Heavy Vehicles (%)		0				40				0	0	15		5	0	0
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized					No											
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.1	6.5	6.2		7.1	6.5	6.2
Critical Headway (sec)		4.10				4.50				7.10	6.50	6.35		7.15	6.50	6.20
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.56				3.50	4.00	3.44		3.55	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		4				16					21			92		15
Capacity, c (veh/h)		848				1004					417			197		287
v/c Ratio		0.01				0.02					0.05			0.47		0.05
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.2			2.3		0.2
Control Delay (s/veh)		9.3	0.0	0.0		8.6	0.1				14.1			38.5		18.2
Level of Service (LOS)		A	A	A		A	A				B			E		C
Approach Delay (s/veh)	0.2				0.3				14.1				35.7			
Approach LOS	A				A				B				E			

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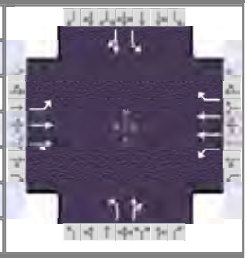
HCS Signalized Intersection Results Summary

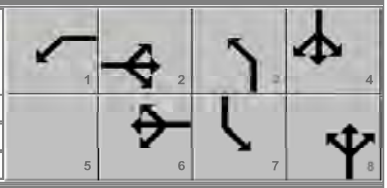
General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & Mickelson Roa…	File Name	(10) SD38&Mickelson_AM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	135	445	35	40	195	190	45	55	65	215	20	195

Signal Information			
Cycle, s	70.0	Reference Phase	2
Offset, s	0	Reference Point	End
Uncoordinated	No	Simult. Gap E/W	On
Force Mode	Fixed	Simult. Gap N/S	On

Green	2.9	35.1	3.1	2.9	10.0	0.0
Yellow	4.0	4.0	4.0	0.0	4.0	0.0
Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase		2	1	6	3	8	7	4
Case Number		6.3	1.0	3.0	1.1	4.0	1.1	4.0
Phase Duration, s		39.1	6.9	46.0	7.1	14.0	10.0	16.9
Change Period, ($Y+R_c$), s		4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s		0.0	3.1	0.0	3.1	3.3	3.1	3.3
Queue Clearance Time (g_s), s			2.8		3.7	7.3	8.0	12.3
Green Extension Time (g_e), s		0.0	0.0	0.0	0.0	0.5	0.0	0.6
Phase Call Probability			0.57		0.61	1.00	0.99	1.00
Max Out Probability			0.00		1.00	0.03	1.00	0.01

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	147	264	258	43	212	207	49	130		234	234	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1170	1772	1726	1688	1687	1323	1688	1615		1688	1523	
Queue Service Time (g_s), s	5.0	6.1	6.1	0.8	1.9	5.2	1.7	5.3		6.0	10.3	
Cycle Queue Clearance Time (g_c), s	5.0	6.1	6.1	0.8	1.9	5.2	1.7	5.3		6.0	10.3	
Green Ratio (*g/C*)	0.50	0.50	0.50	0.57	0.60	0.60	0.19	0.14		0.24	0.18	
Capacity (*c*), veh/h	690	890	867	536	2024	794	187	231		333	282	
Volume-to-Capacity Ratio (*X*)	0.213	0.296	0.298	0.081	0.105	0.260	0.262	0.565		0.702	0.830	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	2.2	4.0	4.0	0.4	1.0	2.4	1.2	3.5		2.5	6.7	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	
Uniform Delay (d_1), s/veh	9.9	10.2	10.2	7.1	6.0	6.6	24.5	28.0		25.5	27.5	
Incremental Delay (d_2), s/veh	0.7	0.8	0.9	0.0	0.1	0.8	0.3	0.8		5.5	2.4	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	10.6	11.0	11.1	7.1	6.1	7.4	24.8	28.8		31.1	29.9	
Level of Service (LOS)	B	B	B	A	A	A	C	C		C	C	
Approach Delay, s/veh / LOS	11.0	B		6.8	A		27.7	C		30.5	C	
Intersection Delay, s/veh / LOS	16.7						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.88	B	1.87	B	2.44	B	2.28	B
Bicycle LOS Score / LOS	1.04	A	0.87	A	0.78	A	1.26	A

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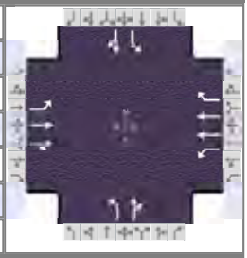
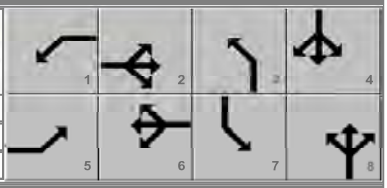
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & Mickelson Roa…	File Name	(10) SD38&Mickelson_PM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	160	220	20	135	535	225	20	65	10	215	15	185

Signal Information												
Cycle, s	70.0	Reference Phase	2									
Offset, s	0	Reference Point	End	Green	5.0	0.7	30.8	1.7	1.3	7.0		
Uncoordinated	No	Simult. Gap E/W	On	Yellow	3.5	0.0	4.0	3.5	3.5	4.0		
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	0.0	1.0	1.0	1.0	1.0		



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	1.1	4.0	1.1	3.0	1.1	4.0	1.1	4.0
Phase Duration, s	10.2	36.5	9.5	35.8	6.2	12.0	12.0	17.8
Change Period, ($Y+R_c$), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Allow Headway (*MAH*), s	3.1	0.0	3.1	0.0	3.1	3.3	3.1	3.3
Queue Clearance Time (g_s), s	5.8		5.3		2.8	5.1	9.5	11.6
Green Extension Time (g_e), s	0.1	0.0	0.1	0.0	0.0	0.3	0.0	0.2
Phase Call Probability	0.97		0.94		0.34	1.00	0.99	1.00
Max Out Probability	1.00		1.00		1.00	0.63	1.00	1.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	174	131	130	147	582	245	22	82		234	217	
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1688	1772	1720	1688	1687	1323	1688	1730		1688	1519	
Queue Service Time (g_s), s	3.8	3.1	3.1	3.3	8.2	8.9	0.8	3.1		7.5	9.6	
Cycle Queue Clearance Time (g_c), s	3.8	3.1	3.1	3.3	8.2	8.9	0.8	3.1		7.5	9.6	
Green Ratio (*g/C*)	0.52	0.45	0.45	0.51	0.44	0.44	0.12	0.10		0.24	0.18	
Capacity (*c*), veh/h	510	798	774	645	1484	582	164	173		356	277	
Volume-to-Capacity Ratio (*X*)	0.341	0.165	0.167	0.228	0.392	0.420	0.132	0.472		0.656	0.785	
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	2.2	2.1	2.1	1.9	5.2	4.8	0.6	2.3		6.3	7.1	
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	
Uniform Delay (d_1), s/veh	9.5	11.4	11.4	9.3	13.3	13.5	27.4	29.8		24.6	27.3	
Incremental Delay (d_2), s/veh	0.1	0.4	0.5	0.1	0.8	2.2	0.1	0.7		3.4	8.9	
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Control Delay (*d*), s/veh	9.7	11.9	11.9	9.4	14.0	15.7	27.6	30.5		28.0	36.2	
Level of Service (LOS)	A	B	B	A	B	B	C	C		C	D	
Approach Delay, s/veh / LOS	11.0	B		13.8	B		29.9	C		32.0	C	
Intersection Delay, s/veh / LOS	18.2						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.89	B	1.89	B	2.44	B	2.28	B
Bicycle LOS Score / LOS	0.85	A	1.29	A	0.66	A	1.23	A

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HCS Two-Way Stop-Control Report

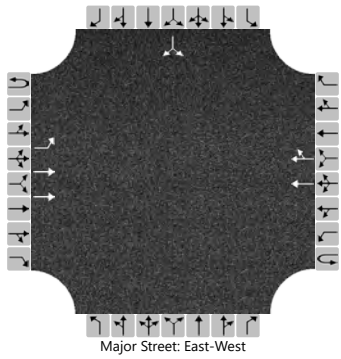
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD38 & 466th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	466th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		0	1	0
Configuration		L	T				T	TR							LR	
Volume (veh/h)	0	2	765				430	5						4		0
Percent Heavy Vehicles (%)	3	0												50		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.10												7.80		6.96
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												4.00		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		2													4	
Capacity, c (veh/h)		1100													206	
v/c Ratio		0.00													0.02	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		8.3	0.0												22.9	
Level of Service (LOS)		A	A												C	
Approach Delay (s/veh)		0.0												22.9		
Approach LOS		A												C		

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HCS Two-Way Stop-Control Report

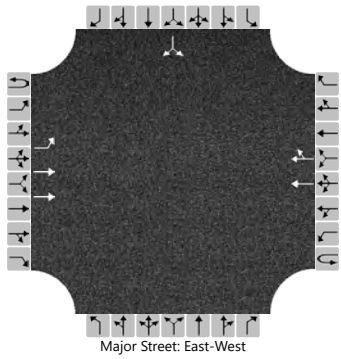
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD38 & 466th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	466th Ave
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		0	1	0
Configuration		L	T				T	TR							LR	
Volume (veh/h)	0	0	445				910	2						5		2
Percent Heavy Vehicles (%)	3	0												33		0
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.10												7.46		6.90
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.83		3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0													8	
Capacity, c (veh/h)		705													167	
v/c Ratio		0.00													0.05	
95% Queue Length, Q_{95} (veh)		0.0													0.1	
Control Delay (s/veh)		10.1	0.0												27.6	
Level of Service (LOS)		B	A												D	
Approach Delay (s/veh)	0.0												27.6			
Approach LOS	A												D			

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HCS Two-Way Stop-Control Report

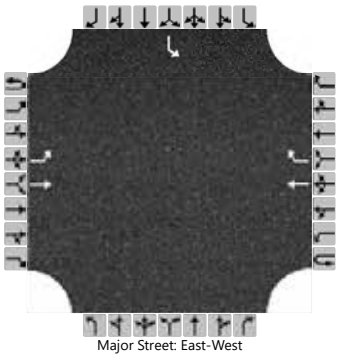
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	12/12/2023
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 WB Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 WB Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		1	0	0
Configuration		L	T				T	R						L		
Volume (veh/h)		40	730				255	20						15		
Percent Heavy Vehicles (%)		0												56		
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized							No									
Median Type | Storage							Left Only							9		

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		
Critical Headway (sec)		4.10												6.96		
Base Follow-Up Headway (sec)		2.2												3.5		
Follow-Up Headway (sec)		2.20												4.00		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		43												16		
Capacity, c (veh/h)		1274												315		
v/c Ratio		0.03												0.05		
95% Queue Length, Q_{95} (veh)		0.1												0.2		
Control Delay (s/veh)		7.9	0.2											17.1		
Level of Service (LOS)		A	A											C		
Approach Delay (s/veh)		0.6												17.1		
Approach LOS		A												C		

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HCS Two-Way Stop-Control Report

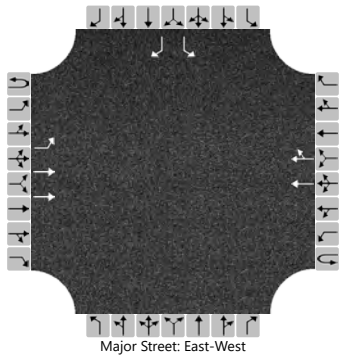
General Information

Analyst	CEC
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 WB Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 WB Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		1	0	1
Configuration		L	T				T	TR						L		R
Volume (veh/h)	0	40	730				255	20						15		190
Percent Heavy Vehicles (%)	3	0												56		12
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized													No			
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.10												7.92		7.14
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												4.06		3.42

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		43												16		207
Capacity, c (veh/h)		1274												235		839
v/c Ratio		0.03												0.07		0.25
95% Queue Length, Q_{95} (veh)		0.1												0.2		1.0
Control Delay (s/veh)		7.9	0.2											21.5		10.7
Level of Service (LOS)		A	A											C		B
Approach Delay (s/veh)	0.6												11.5			
Approach LOS	A												B			

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HCS Two-Way Stop-Control Report

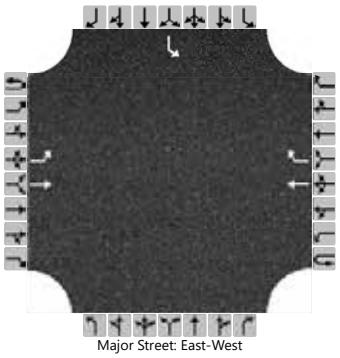
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	5/8/2023
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 WB Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 WB Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	1		0	0	0		1	0	0
Configuration		L	T				T	R						L		
Volume (veh/h)		25	420				415	35						30		
Percent Heavy Vehicles (%)		0												6		
Proportion Time Blocked																
Percent Grade (%)													0			
Right Turn Channelized						No										
Median Type | Storage			Left Only								9					

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		
Critical Headway (sec)		4.10												6.46		
Base Follow-Up Headway (sec)		2.2												3.5		
Follow-Up Headway (sec)		2.20												3.55		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		27												33		
Capacity, c (veh/h)		1085												562		
v/c Ratio		0.03												0.06		
95% Queue Length, Q_{95} (veh)		0.1												0.2		
Control Delay (s/veh)		8.4	0.2											11.8		
Level of Service (LOS)		A	A											B		
Approach Delay (s/veh)		0.6												11.8		
Approach LOS		A												B		

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HCS Two-Way Stop-Control Report

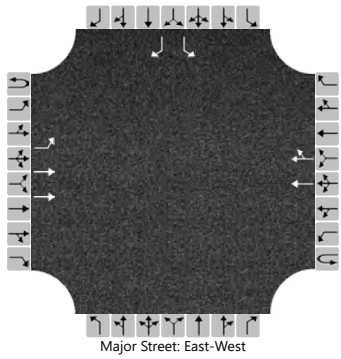
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 WB Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 WB Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	0	2	0		0	0	0		1	0	1
Configuration		L	T				T	TR						L		R
Volume (veh/h)	0	25	420				415	35						30		495
Percent Heavy Vehicles (%)	3	0												6		2
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized														No		
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.5		6.9
Critical Headway (sec)		4.10												6.92		6.94
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.20												3.56		3.32

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		27												33		538
Capacity, c (veh/h)		1085												329		756
v/c Ratio		0.03												0.10		0.71
95% Queue Length, Q_{95} (veh)		0.1												0.3		6.1
Control Delay (s/veh)		8.4	0.2											17.1		20.6
Level of Service (LOS)		A	A											C		C
Approach Delay (s/veh)		0.6												20.4		
Approach LOS		A												C		

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HCS Two-Way Stop-Control Report

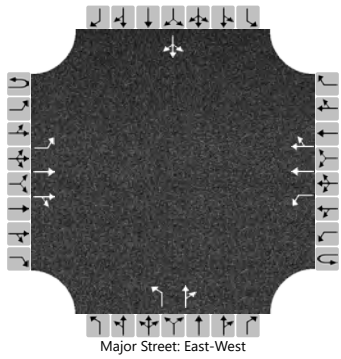
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & I-90 EB Ramp Terminal
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 EB Ramp Terminal
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		1	1	0		0	1	0
Configuration		L	T	TR		L	T	TR		L		TR			LTR	
Volume (veh/h)	0	190	265	20	0	15	420	30		30	15	25		30	10	35
Percent Heavy Vehicles (%)	3	10			3	11				20	20	0		8	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.30				4.32				7.90	6.90	6.90		7.66	6.56	6.96
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.30				2.31				3.70	4.20	3.30		3.58	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		207				16				33		43			82	
Capacity, c (veh/h)		1016				1185				122		259			193	
v/c Ratio		0.20				0.01				0.27		0.17			0.42	
95% Queue Length, Q_{95} (veh)		0.8				0.0				1.0		0.6			1.9	
Control Delay (s/veh)		9.4	0.6			8.1	0.1			44.7		21.7			36.6	
Level of Service (LOS)		A	A			A	A			E		C			E	
Approach Delay (s/veh)	4.1				0.4				31.6				36.6			
Approach LOS	A				A				D				E			

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HCS Two-Way Stop-Control Report

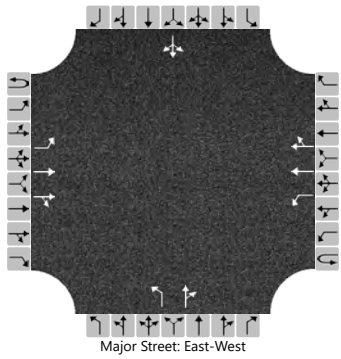
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD38/I-90 EB Ramp Terminal/466th St
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	I-90 EB Ramp Terminal/466th Street
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		1	1	0		0	1	0
Configuration		L	T	TR		L	T	TR		L		TR			LTR	
Volume (veh/h)	0	430	300	15	0	20	240	20		15	10	20		3	2	28
Percent Heavy Vehicles (%)	3	2			3	20				33	33	60		33	0	0
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.14				4.50				8.16	7.16	8.10		8.16	6.50	6.90
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.22				2.40				3.83	4.33	3.90		3.83	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		467				22				16		33			36	
Capacity, c (veh/h)		1277				1094				40		128			231	
v/c Ratio		0.37				0.02				0.41		0.25			0.16	
95% Queue Length, Q_{95} (veh)		1.7				0.1				1.4		1.0			0.5	
Control Delay (s/veh)		9.4	0.6			8.4	0.1			146.1		42.5			23.4	
Level of Service (LOS)		A	A			A	A			F		E			C	
Approach Delay (s/veh)	5.7				0.7				77.0				23.4			
Approach LOS	A				A				F				C			

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HCS Two-Way Stop-Control Report

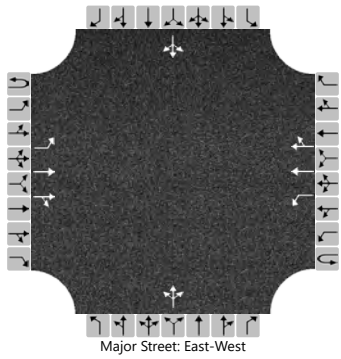
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 468th Avenue
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	468th Ave / County Highway 141
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LTR				LTR	
Volume (veh/h)	0	4	360	0	0	0	225	50		2	2	0		50	0	7
Percent Heavy Vehicles (%)	3	0			3	0				0	100	0		4	0	50
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.10				4.10				7.50	8.50	6.90		7.58	6.50	7.90
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	5.00	3.30		3.54	4.00	3.80

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		4				0					4				62	
Capacity, c (veh/h)		1274				1178					284				483	
v/c Ratio		0.00				0.00					0.02				0.13	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.4	
Control Delay (s/veh)		7.8	0.0			8.1	0.0				17.9				13.6	
Level of Service (LOS)		A	A			A	A				C				B	
Approach Delay (s/veh)	0.1				0.0				17.9				13.6			
Approach LOS	A				A				C				B			

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HCS Two-Way Stop-Control Report

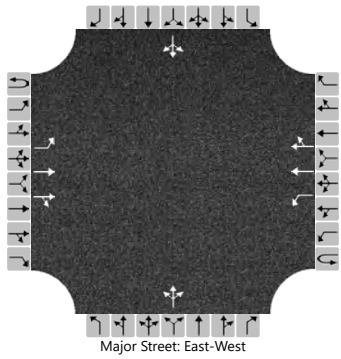
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/30/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 468th Avenue
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	468th Ave / County Highway 141
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes


Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		0	1	0		0	1	0
Configuration		L	T	TR		L	T	TR			LTR				LTR	
Volume (veh/h)	0	0	310	2	0	5	420	55		2	2	0		50	4	4
Percent Heavy Vehicles (%)	3	0			3	0				0	0	0		4	100	50
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.10				4.10				7.50	6.50	6.90		7.58	8.50	7.90
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.30		3.54	5.00	3.80

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		0				5					4				63	
Capacity, c (veh/h)		1060				1231					326				324	
v/c Ratio		0.00				0.00					0.01				0.19	
95% Queue Length, Q_{95} (veh)		0.0				0.0					0.0				0.7	
Control Delay (s/veh)		8.4	0.0			7.9	0.0				16.2				18.8	
Level of Service (LOS)		A	A			A	A				C				C	
Approach Delay (s/veh)	0.0				0.1				16.2				18.8			
Approach LOS	A				A				C				C			

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HCS Two-Way Stop-Control Report

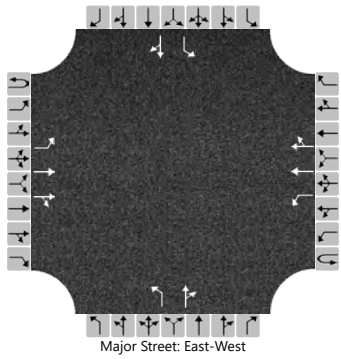
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/26/2023
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 469th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	469th Ave / Co Hwy 139
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		1	1	0		1	1	0
Configuration		L	T	TR		L	T	TR		L		TR		L		TR
Volume (veh/h)	0	5	330	75	0	75	165	5		110	5	280		15	5	5
Percent Heavy Vehicles (%)	3	3			3	5				13	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.16				4.20				7.76	6.56	6.96		7.56	6.56	6.96
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.25				3.63	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		5				82				120		310		16		11
Capacity, c (veh/h)		1380				1095				291		760		219		446
v/c Ratio		0.00				0.07				0.41		0.41		0.07		0.02
95% Queue Length, Q_{95} (veh)		0.0				0.2				1.9		2.0		0.2		0.1
Control Delay (s/veh)		7.6	0.0			8.6	0.3			25.8		13.0		22.7		13.3
Level of Service (LOS)		A	A			A	A			D		B		C		B
Approach Delay (s/veh)	0.1				2.8				16.5				19.0			
Approach LOS	A				A				C				C			

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HCS Two-Way Stop-Control Report

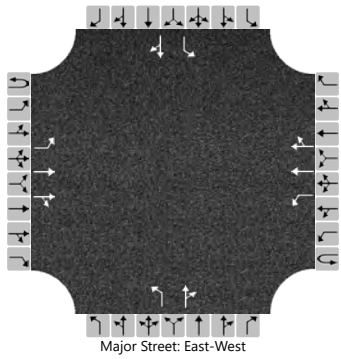
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/26/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & 469th Ave
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	469th Ave / Co Hwy 139
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	0		1	1	0		1	1	0
Configuration		L	T	TR		L	T	TR		L		TR		L		TR
Volume (veh/h)	0	5	245	120	0	285	380	5		100	5	120		15	5	10
Percent Heavy Vehicles (%)	3	3			3	5				2	3	15		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized																
Median Type | Storage			Undivided													

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.16				4.20				7.54	6.56	7.20		7.56	6.56	6.96
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.23				2.25				3.52	4.03	3.45		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		5				310				109		136		16		16
Capacity, c (veh/h)		1130				1137				101		611		74		228
v/c Ratio		0.00				0.27				1.08		0.22		0.22		0.07
95% Queue Length, Q_{95} (veh)		0.0				1.1				6.9		0.8		0.8		0.2
Control Delay (s/veh)		8.2	0.0			9.3	0.8			192.1		12.6		66.4		22.0
Level of Service (LOS)		A	A			A	A			F		B		F		C
Approach Delay (s/veh)	0.1				4.4				92.3				44.2			
Approach LOS	A				A				F				E			

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HCS Two-Way Stop-Control Report

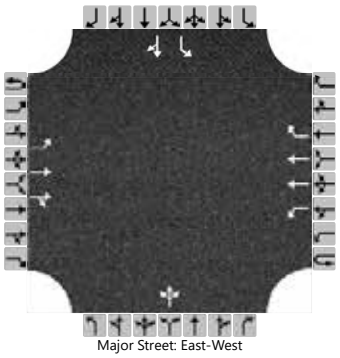
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/29/2024
Analysis Year	2050
Time Analyzed	AM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & La Mesa
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	La Mesa
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	1		0	1	0		1	1	0
Configuration		L	T	TR		L	T	R			LTR			L		TR
Volume (veh/h)	0	30	700	4	0	0	235	15		0	15	5		75	4	30
Percent Heavy Vehicles (%)	3	0			3	0				0	13	0		0	50	0
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized					No											
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.10				4.10				7.50	6.76	6.90		7.50	7.50	6.90
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.13	3.30		3.50	4.50	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		33				0					22			82		37
Capacity, c (veh/h)		1303				857					229			287		566
v/c Ratio		0.03				0.00					0.09			0.28		0.07
95% Queue Length, Q_{95} (veh)		0.1				0.0					0.3			1.1		0.2
Control Delay (s/veh)		7.8	0.2			9.2	0.0				22.3			22.5		11.8
Level of Service (LOS)		A	A			A	A				C			C		B
Approach Delay (s/veh)	0.5				0.0				22.3				19.2			
Approach LOS	A				A				C				C			

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HCS Two-Way Stop-Control Report

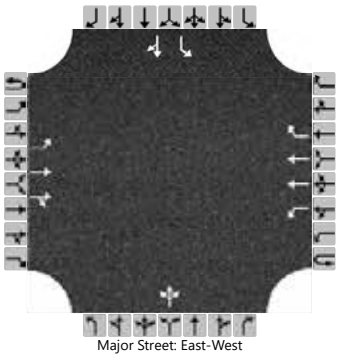
General Information

Analyst	NM
Agency/Co.	HRG
Date Performed	4/29/2024
Analysis Year	2050
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	SD 38

Site Information

Intersection	SD 38 & La Mesa
Jurisdiction	SDDOT
East/West Street	SD 38
North/South Street	La Mesa
Peak Hour Factor	0.92
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	0	0	1	2	1		0	1	0		1	1	0
Configuration		L	T	TR		L	T	R			LTR			L		TR
Volume (veh/h)	0	25	325	0	0	9	735	100		4	5	0		80	15	30
Percent Heavy Vehicles (%)	3	0			3	0				0	0	0		9	0	0
Proportion Time Blocked																
Percent Grade (%)									0				0			
Right Turn Channelized					No											
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1				4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)		4.10				4.10				7.50	6.50	6.90		7.68	6.50	6.90
Base Follow-Up Headway (sec)		2.2				2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)		2.20				2.20				3.50	4.00	3.30		3.59	4.00	3.30

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		27				10					10			87		49
Capacity, c (veh/h)		758				1217					167			158		329
v/c Ratio		0.04				0.01					0.06			0.55		0.15
95% Queue Length, Q_{95} (veh)		0.1				0.0					0.2			2.8		0.5
Control Delay (s/veh)		9.9	0.3			8.0	0.1				27.9			52.4		17.8
Level of Service (LOS)		A	A			A	A				D			F		C
Approach Delay (s/veh)	1.0				0.1				27.9				40.0			
Approach LOS	A				A				D				E			

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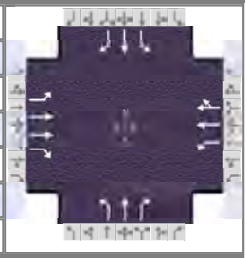
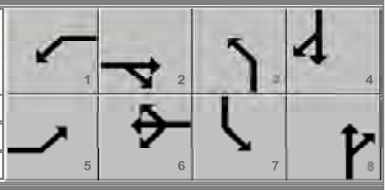
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	AM Peak	PHF	0.92
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 7:15
Intersection	SD 38 & Marion Street	File Name	(18) SD38&Marion_AM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	165	340	105	50	125	75	110	225	120	45	145	40

Signal Information										
Cycle, s	50.0	Reference Phase	2							
Offset, s	0	Reference Point	End							
Uncoordinated	No	Simult. Gap E/W	On							
Force Mode	Fixed	Simult. Gap N/S	On							
				Green	2.6	3.9	12.9	2.5	2.0	10.0
				Yellow	4.0	0.0	4.0	4.0	0.0	4.0
				Red	0.0	0.0	0.0	0.0	0.0	0.0



Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	1.1	4.0	2.0	3.0	2.0	3.0
Phase Duration, s	10.6	20.8	6.6	16.9	8.5	16.0	6.5	14.0
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	2.9	0.0	2.9	0.0	2.9	2.9	2.9	2.9
Queue Clearance Time (g_s), s	7.1		3.1		5.6	8.5	3.5	5.9
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.6
Phase Call Probability	0.92		0.53		0.81	1.00	0.49	1.00
Max Out Probability	1.00		0.04		1.00	0.21	1.00	0.15

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	179	370	114	54	112	106	120	245	130	49	158	43
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1701	1674	1525	1714	1772	1556	1647	1674	1502	1554	1758	1466
Queue Service Time (g_s), s	5.1	4.1	2.7	1.1	2.5	2.7	3.6	6.5	3.6	1.5	3.9	1.2
Cycle Queue Clearance Time (g_c), s	5.1	4.1	2.7	1.1	2.5	2.7	3.6	6.5	3.6	1.5	3.9	1.2
Green Ratio (*g/C*)	0.13	0.34	0.34	0.31	0.26	0.26	0.09	0.24	0.24	0.05	0.20	0.20
Capacity (*c*), veh/h	223	1128	514	456	459	403	148	403	361	77	352	293
Volume-to-Capacity Ratio (*X*)	0.804	0.328	0.222	0.119	0.243	0.263	0.806	0.607	0.361	0.638	0.448	0.148
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	4.1	2.2	1.4	0.6	1.6	1.6	3.2	3.5	1.7	1.0	2.3	0.6
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	21.1	12.4	11.9	12.3	14.7	14.7	22.3	16.9	15.8	23.3	17.6	16.5
Incremental Delay (d_2), s/veh	11.0	0.8	1.0	0.0	1.3	1.6	15.9	0.8	0.2	3.3	0.3	0.1
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	32.1	13.1	12.9	12.3	15.9	16.3	38.2	17.7	16.0	26.6	17.9	16.6
Level of Service (LOS)	C	B	B	B	B	B	D	B	B	C	B	B
Approach Delay, s/veh / LOS	18.2	B		15.4	B		22.2	C		19.4	B	
Intersection Delay, s/veh / LOS	19.1						B					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.08	B	2.09	B	2.26	B	2.42	B
Bicycle LOS Score / LOS	1.03	A	0.71	A	1.30	A	0.90	A

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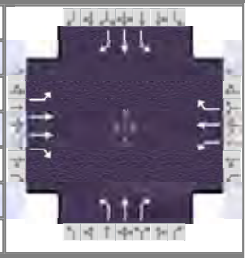
HCS Signalized Intersection Results Summary

General Information				Intersection Information	
Agency	HRG			Duration, h	0.250
Analyst	NM	Analysis Date	May 8, 2023	Area Type	Other
Jurisdiction	SDDOT	Time Period	PM Peak	PHF	0.90
Urban Street	SD 38	Analysis Year	2050	Analysis Period	1> 16:45
Intersection	SD 38 & Marion Street	File Name	(18) SD38&Marion_PM.xus		
Project Description					



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (*v*), veh/h	70	230	105	170	355	55	180	205	125	85	355	205

Signal Information												
Cycle, s	60.0	Reference Phase	2									
Offset, s	0	Reference Point	End	Green	3.7	0.4	13.3	4.2	2.8	15.5		
Uncoordinated	No	Simult. Gap E/W	On	Yellow	4.0	4.0	4.0	4.0	0.0	4.0		
Force Mode	Fixed	Simult. Gap N/S	On	Red	0.0	0.0	0.0	0.0	0.0	0.0		

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6	3	8	7	4
Case Number	2.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0
Phase Duration, s	7.7	17.3	12.2	21.7	11.0	22.3	8.2	19.5
Change Period, ($Y+R_c$), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Allow Headway (*MAH*), s	2.9	0.0	2.9	0.0	2.9	3.0	2.9	3.0
Queue Clearance Time (g_s), s	5.1		8.5		9.0	8.1	5.3	14.7
Green Extension Time (g_e), s	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.8
Phase Call Probability	0.73		0.96		0.96	1.00	0.79	1.00
Max Out Probability	0.55		1.00		1.00	0.03	1.00	0.89

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (*v*), veh/h	78	256	117	189	394	61	200	228	139	94	394	228
Adjusted Saturation Flow Rate (*s*), veh/h/ln	1474	1660	1490	1688	1772	1406	1714	1772	1478	1688	1772	1478
Queue Service Time (g_s), s	3.1	3.9	4.0	6.5	12.1	1.9	7.0	6.1	4.3	3.3	12.7	8.1
Cycle Queue Clearance Time (g_c), s	3.1	3.9	4.0	6.5	12.1	1.9	7.0	6.1	4.3	3.3	12.7	8.1
Green Ratio (*g/C*)	0.06	0.22	0.22	0.14	0.30	0.30	0.12	0.31	0.31	0.07	0.26	0.26
Capacity (*c*), veh/h	92	735	330	230	523	415	200	541	451	119	459	383
Volume-to-Capacity Ratio (*X*)	0.845	0.347	0.354	0.822	0.754	0.147	1.000	0.421	0.308	0.797	0.859	0.595
Back of Queue (*Q*), ft/ln (95 th percentile)												
Back of Queue (*Q*), veh/ln (95 th percentile)	2.1	2.5	2.5	6.1	9.1	1.0	10.0	3.6	2.1	2.7	9.5	4.2
Queue Storage Ratio (*RQ*) (95 th percentile)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Uniform Delay (d_1), s/veh	27.8	19.7	19.7	25.2	19.2	15.6	26.5	16.6	16.0	27.5	21.2	19.5
Incremental Delay (d_2), s/veh	7.7	1.3	3.0	18.3	9.7	0.7	63.6	0.2	0.1	10.2	10.8	0.7
Initial Queue Delay (d_3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (*d*), s/veh	35.6	21.0	22.7	43.5	28.9	16.3	90.1	16.8	16.1	37.7	31.9	20.2
Level of Service (LOS)	D	C	C	D	C	B	F	B	B	D	C	C
Approach Delay, s/veh / LOS	23.9	C		32.0	C		42.5	D		29.0	C	
Intersection Delay, s/veh / LOS	32.1						C					

Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	2.10	B	2.10	B	2.26	B	2.27	B
Bicycle LOS Score / LOS	0.86	A	1.55	B	1.42	A	1.67	B

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Appendix B – IHSDM Output

Interactive Highway Safety Design Model

Crash Prediction Evaluation Report

June 1, 2024

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Report Overview

Report Generated: Jun 1, 2024 3:23 PM
Report Template: System: Single Page, 508 Compliant [System] (mlcpm5, Dec 5, 2019 2:16 PM)

Evaluation Date: Sat Jun 01 15:07:09 CDT 2024
IHSDM Version: v17.0.0 (Sep 22, 2021)
Crash Prediction Module: v12.0.0 (Sep 22, 2021)

User Name: naveen.mallipaddi
Organization Name:
Phone:
E-Mail:

Project Title: SD-38_Build_Option1_I90EBRamp_I
Project Comment: Created Mon Mar 27 16:47:43 CDT 2023
Project Unit System: U.S. Customary

Highway Title: SD-38
Highway Comment: Created Mon Mar 27 16:49:47 CDT 2023
Highway Version: 22

Evaluation Title: Evaluation 56
Evaluation Comment: Created Sat Jun 01 15:06:37 CDT 2024

Minimum Location: 171+44.000
Maximum Location: 580+10.000

Policy for Superelevation: AASHTO 2011 U.S. Customary
Calibration: HSM Configuration
Crash Distribution: HSM Configuration
Model/CMF: HSM Configuration

First Year of Analysis: 2025
Last Year of Analysis: 2050
Empirical-Bayes Analysis: Site-Specific
Highway with Crash History: SD-38
Highway with Crash History Comment: Created Mon Mar 27 16:49:47 CDT 2023
Highway with Crash History Version: 22
First Year of Observed Crashes: 2019
Last Year of Observed Crashes: 2023

Disclaimer Regarding Crash Prediction Method

IMPORTANT NOTICE ABOUT COMPARING RESULTS FROM HIGHWAY SAFETY MANUAL FIRST EDITION (2010) MODELS TO RESULTS FROM NEW MODELS DEVELOPED UNDER NCHRP PROJECTS 17-70, 17-58, AND 17-68

Since the publication of the Highway Safety Manual - First Edition (HSM-1), in 2010 by the American Association of State Highway and Transportation Officials (AASHTO), multiple research efforts have been undertaken through the National Cooperative Highway Research Program (NCHRP) to develop safety performance models for road segment and intersection facility types that were not initially reflected in the HSM-1, in order to expand the breadth and depth of the HSM in the future.

The IHSDM Crash Prediction Module (CPM) is intended as a faithful implementation of HSM Part C predictive methods. As NCHRP projects to develop new predictive methods for the HSM are completed, FHWA works to incorporate the new methods into IHSDM, sometimes in advance of publication in the HSM. The following new crash predictive methods have been accepted by NCHRP project panels and incorporated into IHSDM, while pending AASHTO's approval for incorporation into a future edition of the HSM:

- Roundabouts: completed in 2018 under NCHRP Project 17-70, the new methods will provide improved outcomes for the safety analysis of roundabouts.
- 6+ lane and one-way urban/suburban arterials (including models for segments and intersections): completed under NCHRP Project 17-58.
- Intersection crash prediction methods for some intersection configurations and traffic control types not currently addressed in the HSM (e.g., all-way stop; rural 3-leg signalized; 3-leg stop-controlled where the major leg turns; urban 5-leg signalized; urban high-speed intersections): completed in 2021 under NCHRP Project 17-68.

However, in the absence of local calibration factors (see HSM-1 Part C, Appendix A for guidance on calibration of the predictive models), it is neither appropriate nor advisable to directly compare the results from new models (from NCHRP Projects 17-58, 17-68, and 17-70) to results from HSM-1 models, as the models were not calibrated to the same base state data sets, and consequently can produce unexpected results. If local calibration factors are available and applied to both new models and HSM-1 models, then it may be appropriate to directly compare the results.*[Note: Work being performed under NCHRP Project 17-72 (Update of Crash Modification Factors for the Highway Safety Manual) is expected to re-calibrate many of the old (HSM-1) and new (e.g., NCHRP 17-70) models to data from a single (or small number of) states, that would allow results from all models to be directly compared.]*

The models produced for NCHRP Project 17-70 have independent value in terms of informing the design of a roundabout and assessing the effects of different design characteristics on the expected safety performance of a roundabout.

The HSM-1 interim method previously included in IHSDM for evaluating roundabouts on urban/suburban arterials (i.e., evaluating an existing intersection and then applying a Crash Modification Factor for replacing the existing intersection with a roundabout) has been deactivated in IHSDM, to minimize any confusion with the new roundabout methodology.

Section Types

Section 1 Evaluation

Section: Section 1
Evaluation Start Location: 171+44.000
Evaluation End Location: 580+10.000
Area Type: Rural
Functional Class: Arterial
Type of Alignment: Undivided, Two Lane
Model Category: Rural, Two Lane
Calibration Factor: 2U=1.0; 3ST=1.0; 4ST=1.0;

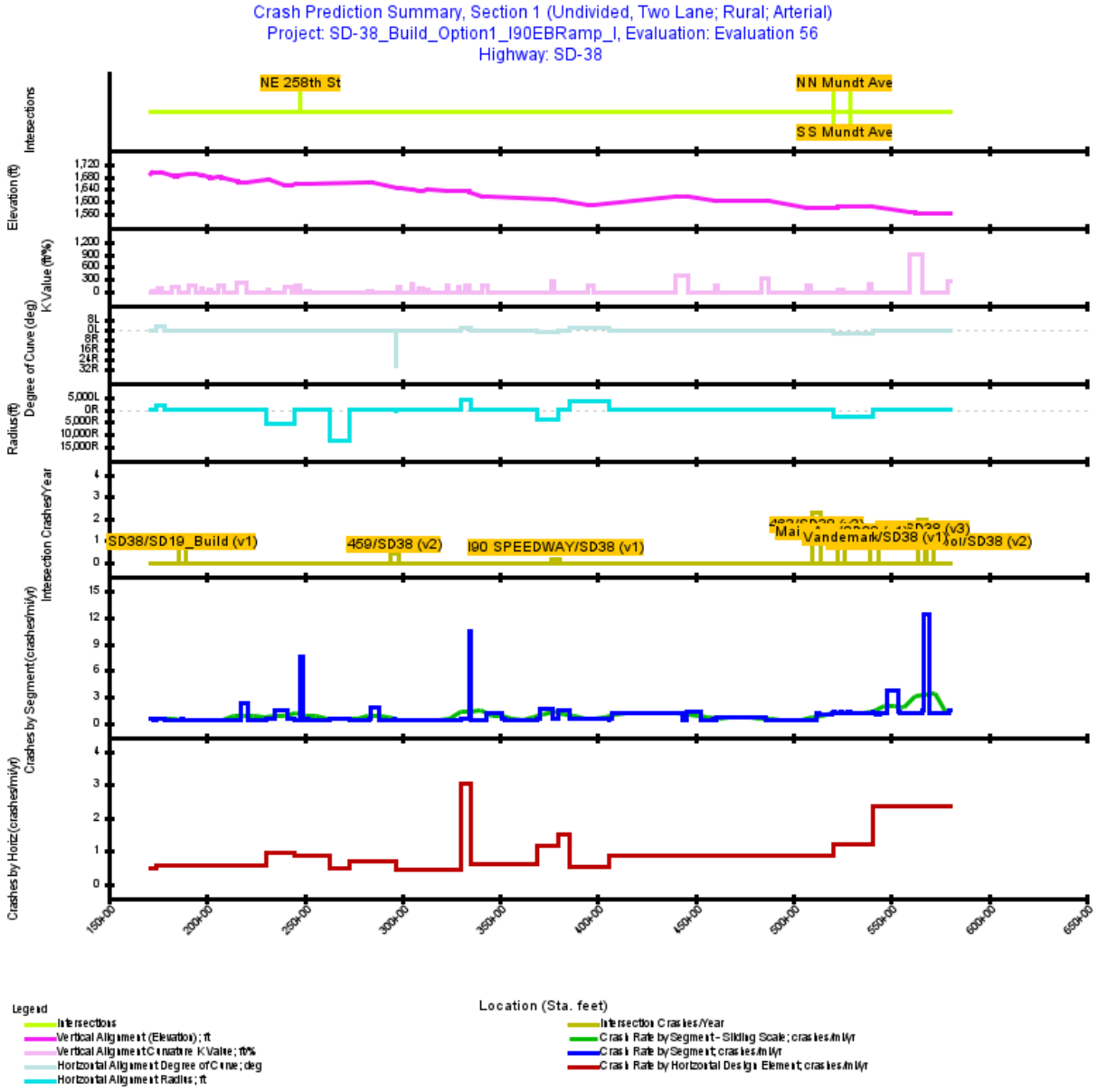

Figure 1. Crash Prediction Summary (Section 1)

Table 1. Observed Crashes Used in the Evaluation (Section 1)

Year	Observed Crashes	Total Crashes Used	FI Crashes	FI no/C Crashes	PDO Crashes
2019	5	4	1	0	3
2020	9	9	5	1	4
2021	8	7	3	1	4
2022	6	6	3	1	3
2023	0	0	0	0	0
All Years	28 [1]	26	12	3	14

Footnotes

[1] Note: Observed crash data that does not comply with the associated CPM model requirements may not be used in EB processing.

Table 2. Evaluation Highway - Homogeneous Segments (Section 1)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
1	Rural Two-Lane Segment Two-lane Undivided	171+44.000	172+42.000	98.00	0.0186	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	4.25	6.2	3	false	0	false	false	false				
2	Rural Two-Lane Segment Two-lane Undivided	172+42.000	174+52.690	210.69	0.0399	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.17	6.2	3	false	0	false	false	false				
3	Rural Two-Lane Segment Two-lane Undivided	174+52.690	176+25.000	172.31	0.0326	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.17	6.2	3	false	0	false	false	false	2,074.80	2.0	true	40
4	Rural Two-Lane Segment Two-lane Undivided	176+25.000	178+85.250	260.25	0.0493	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.88	6.2	3	false	0	false	false	false	2,074.80	2.0	true	40
5	Rural Two-Lane Segment Two-lane Undivided	178+85.250	183+75.370	490.12	0.0928	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.88	6.2	3	false	0	false	false	false				
6	Rural Two-Lane Segment Two-lane Undivided	183+75.370	184+00.000	24.63	0.0047	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
7	Rural Two-Lane Segment Two-lane Undivided	184+00.000	184+45.000	45.00	0.0085	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
8	Rural Two-Lane Segment Two-lane Undivided	184+45.000	185+20.000	75.00	0.0142	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
9	Rural Two-Lane Segment Two-lane Undivided	185+20.000	186+60.000	140.00	0.0265	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
10	Rural Two-Lane Segment Two-lane Undivided	186+60.000	187+20.000	60.00	0.0114	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
11	Rural Two-Lane Segment Two-lane Undivided	187+20.000	187+60.000	40.00	0.0076	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	0.00	1.13	6.2	3	false	0	false	false	false				
12	Rural Two-Lane Segment Two-lane Undivided	187+60.000	190+00.000	240.00	0.0455	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
13	Rural Two-Lane Segment Two-lane Undivided	190+00.000	192+00.000	200.00	0.0379	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
14	Rural Two-Lane Segment Two-lane Undivided	192+00.000	192+39.270	39.27	0.0074	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
15	Rural Two-Lane Segment Two-lane Undivided	192+39.270	193+60.000	120.73	0.0229	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.94	6.2	3	false	0	false	false	false				
16	Rural Two-Lane Segment Two-lane Undivided	193+60.000	197+65.000	405.00	0.0767	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.94	6.2	3	false	0	false	false	false				
17	Rural Two-Lane Segment Two-lane Undivided	197+65.000	199+00.000	135.00	0.0256	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.94	6.2	3	false	0	false	false	false				
18	Rural Two-Lane Segment Two-lane Undivided	199+00.000	201+63.750	263.75	0.0500	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.94	6.2	3	false	0	false	false	false				
19	Rural Two-Lane Segment Two-lane Undivided	201+63.750	202+00.000	36.25	0.0069	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.13	6.2	3	false	0	false	false	false				
20	Rural Two-Lane Segment Two-lane Undivided	202+00.000	207+00.000	500.00	0.0947	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.13	6.2	3	false	0	false	false	false				
21	Rural Two-Lane Segment Two-lane Undivided	207+00.000	207+49.760	49.76	0.0094	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.13	6.2	3	false	0	false	false	false				
22	Rural Two-Lane Segment Two-lane Undivided	207+49.760	217+74.250	1,024.49	0.1940	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.70	6.2	3	false	0	false	false	false				
23	Rural Two-Lane Segment Two-lane Undivided	217+74.250	221+00.000	325.75	0.0617	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false				
24	Rural Two-Lane Segment Two-lane Undivided	221+00.000	226+00.000	500.00	0.0947	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false				
25	Rural Two-Lane Segment Two-lane Undivided	226+00.000	230+66.250	466.25	0.0883	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false				
26	Rural Two-Lane Segment Two-lane Undivided	230+66.250	231+39.700	73.45	0.0139	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
27	Rural Two-Lane Segment Two-lane Undivided	231+39.700	235+00.000	360.30	0.0682	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-2.00	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
28	Rural Two-Lane Segment Two-lane Undivided	235+00.000	241+61.390	661.39	0.1253	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-2.00	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
29	Rural Two-Lane Segment Two-lane Undivided	241+61.390	242+00.000	38.61	0.0073	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.16	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
30	Rural Two-Lane Segment Two-lane Undivided	242+00.000	245+14.280	314.28	0.0595	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.16	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
31	Rural Two-Lane Segment Two-lane Undivided	245+14.280	246+55.100	140.82	0.0267	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.16	6.2	3	false	0	false	false	false				
32	Rural Two-Lane Segment Two-lane Undivided	246+55.100	248+00.000	144.90	0.0274	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.42	6.2	3	false	0	false	false	false				
33	Rural Two-Lane Segment Two-lane Undivided	248+00.000	249+00.000	100.00	0.0189	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	0.00	-0.42	6.2	3	false	0	false	false	false				
34	Rural Two-Lane Segment Two-lane Undivided	249+00.000	251+21.980	221.98	0.0420	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.42	6.2	3	false	0	false	false	false				
35	Rural Two-Lane Segment Two-lane Undivided	251+21.980	252+40.240	118.26	0.0224	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	3.43	6.2	3	false	0	false	false	false				
36	Rural Two-Lane Segment Two-lane Undivided	252+40.240	263+22.600	1,082.36	0.2050	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false				
37	Rural Two-Lane Segment Two-lane Undivided	263+22.600	272+66.740	944.14	0.1788	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false	12,237.00	2.0	true	70
38	Rural Two-Lane Segment Two-lane Undivided	272+66.740	280+00.000	733.26	0.1389	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false				
39	Rural Two-Lane Segment Two-lane Undivided	280+00.000	283+15.050	315.05	0.0597	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false				
40	Rural Two-Lane Segment Two-lane Undivided	283+15.050	284+08.540	93.49	0.0177	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	4.47	6.2	3	false	0	false	false	false				
41	Rural Two-Lane Segment Two-lane Undivided	284+08.540	288+50.000	441.46	0.0836	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
42	Rural Two-Lane Segment Two-lane Undivided	288+50.000	289+00.000	50.00	0.0095	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
43	Rural Two-Lane Segment Two-lane Undivided	289+00.000	295+90.000	690.00	0.1307	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
44	Rural Two-Lane Segment Two-lane Undivided	295+90.000	296+00.000	10.00	0.0019	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	0.00	-1.47	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
45	Rural Two-Lane Segment Two-lane Undivided	296+00.000	296+10.000	10.00	0.0019	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	0.00	-1.47	6.2	3	false	0	false	false	false				
46	Rural Two-Lane Segment Two-lane Undivided	296+10.000	296+96.520	86.52	0.0164	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
47	Rural Two-Lane Segment Two-lane Undivided	296+96.520	298+33.660	137.14	0.0260	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
48	Rural Two-Lane Segment Two-lane Undivided	298+33.660	303+50.000	516.34	0.0978	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.61	6.2	3	false	0	false	false	false				
49	Rural Two-Lane Segment Two-lane Undivided	303+50.000	304+50.000	100.00	0.0189	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.61	6.2	3	false	0	false	false	false				
50	Rural Two-Lane Segment Two-lane Undivided	304+50.000	305+02.039	52.04	0.0099	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.61	6.2	3	false	0	false	false	false				
51	Rural Two-Lane Segment Two-lane Undivided	305+02.039	309+35.490	433.45	0.0821	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.15	6.2	3	false	0	false	false	false				
52	Rural Two-Lane Segment Two-lane Undivided	309+35.490	311+70.000	234.51	0.0444	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.24	6.2	3	false	0	false	false	false				
53	Rural Two-Lane Segment Two-lane Undivided	311+70.000	313+25.000	155.00	0.0294	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.24	6.2	3	false	0	false	false	false				
54	Rural Two-Lane Segment Two-lane Undivided	313+25.000	323+00.000	975.00	0.1847	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.33	6.2	3	false	0	false	false	false				
55	Rural Two-Lane Segment Two-lane Undivided	323+00.000	323+26.980	26.98	0.0051	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.33	6.2	3	false	0	false	false	false				
56	Rural Two-Lane Segment Two-lane Undivided	323+26.980	328+89.230	562.25	0.1065	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.26	6.2	3	false	0	false	false	false				
57	Rural Two-Lane Segment Two-lane Undivided	328+89.230	329+81.740	92.51	0.0175	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.52	6.2	3	false	0	false	false	false				
58	Rural Two-Lane Segment Two-lane Undivided	329+81.740	333+24.920	343.18	0.0650	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.52	6.2	3	false	0	false	false	false	4,010.13	2.0	true	70
59	Rural Two-Lane Segment Two-lane Undivided	333+24.920	334+00.000	75.08	0.0142	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-2.17	6.2	3	false	0	false	false	false	4,010.13	2.0	true	70

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
60	Rural Two-Lane Segment Two-lane Undivided	334+00.000	335+39.960	139.96	0.0265	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-2.17	6.2	3	false	0	false	false	false	4,010.13	2.0	true	70
61	Rural Two-Lane Segment Two-lane Undivided	335+39.960	342+39.000	699.04	0.1324	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-2.17	6.2	3	false	0	false	false	false				
62	Rural Two-Lane Segment Two-lane Undivided	342+39.000	343+00.000	61.00	0.0116	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
63	Rural Two-Lane Segment Two-lane Undivided	343+00.000	351+20.000	820.00	0.1553	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
64	Rural Two-Lane Segment Two-lane Undivided	351+20.000	352+00.000	80.00	0.0152	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	0.00	-0.24	6.2	3	false	0	false	false	false				
65	Rural Two-Lane Segment Two-lane Undivided	352+00.000	352+20.000	20.00	0.0038	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	0.00	-0.24	6.2	3	false	0	false	false	false				
66	Rural Two-Lane Segment Two-lane Undivided	352+20.000	362+50.000	1,030.00	0.1951	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
67	Rural Two-Lane Segment Two-lane Undivided	362+50.000	369+14.990	664.99	0.1259	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
68	Rural Two-Lane Segment Two-lane Undivided	369+14.990	370+30.000	115.01	0.0218	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
69	Rural Two-Lane Segment Two-lane Undivided	370+30.000	370+60.000	30.00	0.0057	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
70	Rural Two-Lane Segment Two-lane Undivided	370+60.000	376+83.610	623.61	0.1181	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
71	Rural Two-Lane Segment Two-lane Undivided	376+83.610	378+00.000	116.39	0.0220	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
72	Rural Two-Lane Segment Two-lane Undivided	378+00.000	378+40.000	40.00	0.0076	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
73	Rural Two-Lane Segment Two-lane Undivided	378+40.000	378+60.000	20.00	0.0038	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
74	Rural Two-Lane Segment Two-lane Undivided	378+60.000	379+00.000	40.00	0.0076	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
75	Rural Two-Lane Segment Two-lane Undivided	379+00.000	379+62.690	62.69	0.0119	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
76	Rural Two-Lane Segment Two-lane Undivided	379+62.690	385+22.970	560.28	0.1061	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false				
77	Rural Two-Lane Segment Two-lane Undivided	385+22.970	386+60.000	137.03	0.0260	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
78	Rural Two-Lane Segment Two-lane Undivided	386+60.000	389+50.000	290.00	0.0549	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
79	Rural Two-Lane Segment Two-lane Undivided	389+50.000	394+00.000	450.00	0.0852	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
80	Rural Two-Lane Segment Two-lane Undivided	394+00.000	396+46.150	246.15	0.0466	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
81	Rural Two-Lane Segment Two-lane Undivided	396+46.150	397+00.000	53.85	0.0102	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
82	Rural Two-Lane Segment Two-lane Undivided	397+00.000	399+00.000	200.00	0.0379	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	8.00	0.72	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
83	Rural Two-Lane Segment Two-lane Undivided	399+00.000	405+75.410	675.41	0.1279	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
84	Rural Two-Lane Segment Two-lane Undivided	405+75.410	406+00.000	24.59	0.0047	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false				
85	Rural Two-Lane Segment Two-lane Undivided	406+00.000	407+00.000	100.00	0.0189	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	8.00	0.72	6.2	3	false	0	false	false	false				
86	Rural Two-Lane Segment Two-lane Undivided	407+00.000	443+25.000	3,625.00	0.6866	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false				
87	Rural Two-Lane Segment Two-lane Undivided	443+25.000	445+50.000	225.00	0.0426	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
88	Rural Two-Lane Segment Two-lane Undivided	445+50.000	452+50.000	700.00	0.1326	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
89	Rural Two-Lane Segment Two-lane Undivided	452+50.000	459+00.000	650.00	0.1231	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
90	Rural Two-Lane Segment Two-lane Undivided	459+00.000	460+00.000	100.00	0.0189	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	0.00	-0.96	6.2	3	false	0	false	false	false				
91	Rural Two-Lane Segment Two-lane Undivided	460+00.000	460+58.580	58.58	0.0111	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
92	Rural Two-Lane Segment Two-lane Undivided	460+58.580	485+61.230	2,502.65	0.4740	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.01	6.2	3	false	0	false	false	false				
93	Rural Two-Lane Segment Two-lane Undivided	485+61.230	503+00.000	1,738.77	0.3293	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	false	false				
94	Rural Two-Lane Segment Two-lane Undivided	503+00.000	507+00.000	400.00	0.0758	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	false	false				
95	Rural Two-Lane Segment Two-lane Undivided	507+00.000	508+00.000	100.00	0.0189	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	true	false				
96	Rural Two-Lane Segment Two-lane Undivided	508+00.000	508+08.240	8.24	0.0016	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	true	false				
97	Rural Two-Lane Segment Two-lane Undivided	508+08.240	510+30.000	221.76	0.0420	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	false	true	false				
98	Rural Two-Lane Segment Two-lane Undivided	510+30.000	512+00.000	170.00	0.0322	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	false	false	false				
99	Rural Two-Lane Segment Two-lane Undivided	512+00.000	513+00.000	100.00	0.0189	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	0.21	6.2	3	false	0	false	true	false				
100	Rural Two-Lane Segment Two-lane Undivided	513+00.000	515+00.000	200.00	0.0379	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	false	true	false				
101	Rural Two-Lane Segment Two-lane Undivided	515+00.000	520+00.000	500.00	0.0947	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	true	true	false				
102	Rural Two-Lane Segment Two-lane Undivided	520+00.000	520+49.150	49.15	0.0093	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	0.21	6.2	3	false	0	false	true	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
103	Rural Two-Lane Segment Two-lane Undivided	520+49.150	521+00.000	50.85	0.0096	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	0.21	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
104	Rural Two-Lane Segment Two-lane Undivided	521+00.000	523+38.600	238.60	0.0452	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
105	Rural Two-Lane Segment Two-lane Undivided	523+38.600	524+00.000	61.40	0.0116	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	1.90	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
106	Rural Two-Lane Segment Two-lane Undivided	524+00.000	525+00.000	100.00	0.0189	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	1.90	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
107	Rural Two-Lane Segment Two-lane Undivided	525+00.000	525+18.580	18.58	0.0035	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	1.90	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
108	Rural Two-Lane Segment Two-lane Undivided	525+18.580	528+00.000	281.42	0.0533	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.02	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
109	Rural Two-Lane Segment Two-lane Undivided	528+00.000	529+00.000	100.00	0.0189	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.02	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
110	Rural Two-Lane Segment Two-lane Undivided	529+00.000	539+00.000	1,000.00	0.1894	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.02	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
111	Rural Two-Lane Segment Two-lane Undivided	539+00.000	539+50.000	50.00	0.0095	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.02	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
112	Rural Two-Lane Segment Two-lane Undivided	539+50.000	540+00.000	50.00	0.0095	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
113	Rural Two-Lane Segment Two-lane Undivided	540+00.000	540+50.000	50.00	0.0095	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
114	Rural Two-Lane Segment Two-lane Undivided	540+50.000	540+74.370	24.37	0.0046	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
115	Rural Two-Lane Segment Two-lane Undivided	540+74.370	541+00.000	25.63	0.0049	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
116	Rural Two-Lane Segment Two-lane Undivided	541+00.000	541+50.000	50.00	0.0095	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
117	Rural Two-Lane Segment Two-lane Undivided	541+50.000	541+70.000	20.00	0.0038	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
118	Rural Two-Lane Segment Two-lane Undivided	541+70.000	542+30.000	60.00	0.0114	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
119	Rural Two-Lane Segment Two-lane Undivided	542+30.000	542+64.000	34.00	0.0064	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false				
120	Rural Two-Lane Segment Two-lane Undivided	542+64.000	543+34.000	70.00	0.0133	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false				
121	Rural Two-Lane Segment Two-lane Undivided	543+34.000	544+00.000	66.00	0.0125	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false				
122	Rural Two-Lane Segment Two-lane Undivided	544+00.000	545+00.000	100.00	0.0189	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
123	Rural Two-Lane Segment Two-lane Undivided	545+00.000	548+23.000	323.00	0.0612	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
124	Rural Two-Lane Segment Two-lane Undivided	548+23.000	553+70.000	547.00	0.1036	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
125	Rural Two-Lane Segment Two-lane Undivided	553+70.000	554+00.000	30.00	0.0057	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	false	false				
126	Rural Two-Lane Segment Two-lane Undivided	554+00.000	554+20.000	20.00	0.0038	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
127	Rural Two-Lane Segment Two-lane Undivided	554+20.000	560+00.000	580.00	0.1098	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
128	Rural Two-Lane Segment Two-lane Undivided	560+00.000	562+58.560	258.56	0.0490	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
129	Rural Two-Lane Segment Two-lane Undivided	562+58.560	564+00.000	141.44	0.0268	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
130	Rural Two-Lane Segment Two-lane Undivided	564+00.000	565+00.000	100.00	0.0189	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
131	Rural Two-Lane Segment Two-lane Undivided	565+00.000	565+77.000	77.00	0.0146	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
132	Rural Two-Lane Segment Two-lane Undivided	565+77.000	566+10.000	33.00	0.0063	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				
133	Rural Two-Lane Segment Two-lane Undivided	566+10.000	566+50.000	40.00	0.0076	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				
134	Rural Two-Lane Segment Two-lane Undivided	566+50.000	569+37.000	287.00	0.0544	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
135	Rural Two-Lane Segment Two-lane Undivided	569+37.000	569+70.000	33.00	0.0063	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	0.00	-0.20	6.2	3	false	0	false	false	false				
136	Rural Two-Lane Segment Two-lane Undivided	569+70.000	570+00.000	30.00	0.0057	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
137	Rural Two-Lane Segment Two-lane Undivided	570+00.000	575+00.000	500.00	0.0947	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	true	false	false				
138	Rural Two-Lane Segment Two-lane Undivided	575+00.000	579+50.000	450.00	0.0852	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
139	Rural Two-Lane Segment Two-lane Undivided	579+50.000	579+70.000	20.00	0.0038	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				
140	Rural Two-Lane Segment Two-lane Undivided	579+70.000	580+10.000	40.00	0.0076	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				

Table 3. Crash History Highway - Homogeneous Segments (Section 1)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
1	Rural Two-Lane Segment Two-lane Undivided	171+44.000	172+42.000	98.00	0.0186	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	4.25	6.2	3	false	0	false	false	false				
2	Rural Two-Lane Segment Two-lane Undivided	172+42.000	174+52.690	210.69	0.0399	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	0.17	6.2	3	false	0	false	false	false				
3	Rural Two-Lane Segment Two-lane Undivided	174+52.690	176+25.000	172.31	0.0326	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	0.17	6.2	3	false	0	false	false	false	2,074.80	2.0	true	40
4	Rural Two-Lane Segment Two-lane Undivided	176+25.000	178+85.250	260.25	0.0493	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-1.88	6.2	3	false	0	false	false	false	2,074.80	2.0	true	40
5	Rural Two-Lane Segment Two-lane Undivided	178+85.250	183+75.370	490.12	0.0928	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-1.88	6.2	3	false	0	false	false	false				
6	Rural Two-Lane Segment Two-lane Undivided	183+75.370	184+00.000	24.63	0.0047	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
7	Rural Two-Lane Segment Two-lane Undivided	184+00.000	184+45.000	45.00	0.0085	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
8	Rural Two-Lane Segment Two-lane Undivided	184+45.000	185+20.000	75.00	0.0142	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
9	Rural Two-Lane Segment Two-lane Undivided	185+20.000	186+60.000	140.00	0.0265	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
10	Rural Two-Lane Segment Two-lane Undivided	186+60.000	187+20.000	60.00	0.0114	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
11	Rural Two-Lane Segment Two-lane Undivided	187+20.000	187+60.000	40.00	0.0076	2019-2022: 2,085; 2023: 2,134	12.00	12.00	0.00	0.00	1.13	6.2	3	false	0	false	false	false				
12	Rural Two-Lane Segment Two-lane Undivided	187+60.000	190+00.000	240.00	0.0455	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
13	Rural Two-Lane Segment Two-lane Undivided	190+00.000	192+00.000	200.00	0.0379	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
14	Rural Two-Lane Segment Two-lane Undivided	192+00.000	192+39.270	39.27	0.0074	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
15	Rural Two-Lane Segment Two-lane Undivided	192+39.270	193+60.000	120.73	0.0229	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.94	6.2	3	false	0	false	false	false				
16	Rural Two-Lane Segment Two-lane Undivided	193+60.000	197+65.000	405.00	0.0767	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.94	6.2	3	false	0	false	false	false				
17	Rural Two-Lane Segment Two-lane Undivided	197+65.000	199+00.000	135.00	0.0256	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-1.94	6.2	3	false	0	false	false	false				
18	Rural Two-Lane Segment Two-lane Undivided	199+00.000	201+63.750	263.75	0.0500	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-1.94	6.2	3	false	0	false	false	false				
19	Rural Two-Lane Segment Two-lane Undivided	201+63.750	202+00.000	36.25	0.0069	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	0.13	6.2	3	false	0	false	false	false				
20	Rural Two-Lane Segment Two-lane Undivided	202+00.000	207+00.000	500.00	0.0947	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	0.13	6.2	3	false	0	false	false	false				
21	Rural Two-Lane Segment Two-lane Undivided	207+00.000	207+49.760	49.76	0.0094	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	0.13	6.2	3	false	0	false	false	false				
22	Rural Two-Lane Segment Two-lane Undivided	207+49.760	217+74.250	1,024.49	0.1940	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-1.70	6.2	3	false	0	false	false	false				
23	Rural Two-Lane Segment Two-lane Undivided	217+74.250	221+00.000	325.75	0.0617	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false				
24	Rural Two-Lane Segment Two-lane Undivided	221+00.000	226+00.000	500.00	0.0947	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false				
25	Rural Two-Lane Segment Two-lane Undivided	226+00.000	230+66.250	466.25	0.0883	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
26	Rural Two-Lane Segment Two-lane Undivided	230+66.250	231+39.700	73.45	0.0139	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
27	Rural Two-Lane Segment Two-lane Undivided	231+39.700	235+00.000	360.30	0.0682	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-2.00	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
28	Rural Two-Lane Segment Two-lane Undivided	235+00.000	241+61.390	661.39	0.1253	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-2.00	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
29	Rural Two-Lane Segment Two-lane Undivided	241+61.390	242+00.000	38.61	0.0073	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	1.16	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
30	Rural Two-Lane Segment Two-lane Undivided	242+00.000	245+14.280	314.28	0.0595	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	1.16	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
31	Rural Two-Lane Segment Two-lane Undivided	245+14.280	246+55.100	140.82	0.0267	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	1.16	6.2	3	false	0	false	false	false				
32	Rural Two-Lane Segment Two-lane Undivided	246+55.100	248+00.000	144.90	0.0274	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.42	6.2	3	false	0	false	false	false				
33	Rural Two-Lane Segment Two-lane Undivided	248+00.000	249+00.000	100.00	0.0189	2019-2022: 2,085; 2023: 2,134	12.00	12.00	0.00	0.00	-0.42	6.2	3	false	0	false	false	false				
34	Rural Two-Lane Segment Two-lane Undivided	249+00.000	251+21.980	221.98	0.0420	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.42	6.2	3	false	0	false	false	false				
35	Rural Two-Lane Segment Two-lane Undivided	251+21.980	252+40.240	118.26	0.0224	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	3.43	6.2	3	false	0	false	false	false				
36	Rural Two-Lane Segment Two-lane Undivided	252+40.240	263+22.600	1,082.36	0.2050	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false				
37	Rural Two-Lane Segment Two-lane Undivided	263+22.600	272+66.740	944.14	0.1788	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false	12,237.00	2.0	true	70
38	Rural Two-Lane Segment Two-lane Undivided	272+66.740	280+00.000	733.26	0.1389	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false				
39	Rural Two-Lane Segment Two-lane Undivided	280+00.000	283+15.050	315.05	0.0597	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false				
40	Rural Two-Lane Segment Two-lane Undivided	283+15.050	284+08.540	93.49	0.0177	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	4.47	6.2	3	false	0	false	false	false				
41	Rural Two-Lane Segment Two-lane Undivided	284+08.540	288+50.000	441.46	0.0836	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
42	Rural Two-Lane Segment Two-lane Undivided	288+50.000	289+00.000	50.00	0.0095	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
43	Rural Two-Lane Segment Two-lane Undivided	289+00.000	295+90.000	690.00	0.1307	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
44	Rural Two-Lane Segment Two-lane Undivided	295+90.000	296+00.000	10.00	0.0019	2019-2022: 2,085; 2023: 2,134	12.00	12.00	0.00	0.00	-1.47	6.2	3	false	0	false	false	false				
45	Rural Two-Lane Segment Two-lane Undivided	296+00.000	296+10.000	10.00	0.0019	2019-2022: 2,085; 2023: 2,134	12.00	12.00	0.00	0.00	-1.47	6.2	3	false	0	false	false	false				
46	Rural Two-Lane Segment Two-lane Undivided	296+10.000	296+96.520	86.52	0.0164	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
47	Rural Two-Lane Segment Two-lane Undivided	296+96.520	298+33.660	137.14	0.0260	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
48	Rural Two-Lane Segment Two-lane Undivided	298+33.660	303+50.000	516.34	0.0978	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.61	6.2	3	false	0	false	false	false				
49	Rural Two-Lane Segment Two-lane Undivided	303+50.000	304+50.000	100.00	0.0189	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.61	6.2	3	false	0	false	false	false				
50	Rural Two-Lane Segment Two-lane Undivided	304+50.000	305+02.039	52.04	0.0099	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.61	6.2	3	false	0	false	false	false				
51	Rural Two-Lane Segment Two-lane Undivided	305+02.039	309+35.490	433.45	0.0821	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-1.15	6.2	3	false	0	false	false	false				
52	Rural Two-Lane Segment Two-lane Undivided	309+35.490	311+70.000	234.51	0.0444	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	1.24	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
53	Rural Two-Lane Segment Two-lane Undivided	311+70.000	313+25.000	155.00	0.0294	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	1.24	6.2	3	false	0	false	false	false				
54	Rural Two-Lane Segment Two-lane Undivided	313+25.000	323+00.000	975.00	0.1847	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.33	6.2	3	false	0	false	false	false				
55	Rural Two-Lane Segment Two-lane Undivided	323+00.000	323+26.980	26.98	0.0051	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.33	6.2	3	false	0	false	false	false				
56	Rural Two-Lane Segment Two-lane Undivided	323+26.980	328+89.230	562.25	0.1065	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	0.26	6.2	3	false	0	false	false	false				
57	Rural Two-Lane Segment Two-lane Undivided	328+89.230	329+81.740	92.51	0.0175	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.52	6.2	3	false	0	false	false	false				
58	Rural Two-Lane Segment Two-lane Undivided	329+81.740	333+24.920	343.18	0.0650	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.52	6.2	3	false	0	false	false	false	4,010.13	2.0	true	70
59	Rural Two-Lane Segment Two-lane Undivided	333+24.920	334+00.000	75.08	0.0142	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-2.17	6.2	3	false	0	false	false	false	4,010.13	2.0	true	70
60	Rural Two-Lane Segment Two-lane Undivided	334+00.000	335+39.960	139.96	0.0265	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-2.17	6.2	3	false	0	false	false	false	4,010.13	2.0	true	70
61	Rural Two-Lane Segment Two-lane Undivided	335+39.960	342+39.000	699.04	0.1324	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-2.17	6.2	3	false	0	false	false	false				
62	Rural Two-Lane Segment Two-lane Undivided	342+39.000	343+00.000	61.00	0.0116	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
63	Rural Two-Lane Segment Two-lane Undivided	343+00.000	351+20.000	820.00	0.1553	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
64	Rural Two-Lane Segment Two-lane Undivided	351+20.000	352+00.000	80.00	0.0152	2019-2022: 2,085; 2023: 2,134	12.00	12.00	0.00	0.00	-0.24	6.2	3	false	0	false	false	false				
65	Rural Two-Lane Segment Two-lane Undivided	352+00.000	352+20.000	20.00	0.0038	2019-2022: 2,085; 2023: 2,134	12.00	12.00	0.00	0.00	-0.24	6.2	3	false	0	false	false	false				
66	Rural Two-Lane Segment Two-lane Undivided	352+20.000	362+50.000	1,030.00	0.1951	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
67	Rural Two-Lane Segment Two-lane Undivided	362+50.000	369+14.990	664.99	0.1259	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
68	Rural Two-Lane Segment Two-lane Undivided	369+14.990	370+30.000	115.01	0.0218	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
69	Rural Two-Lane Segment Two-lane Undivided	370+30.000	370+60.000	30.00	0.0057	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
70	Rural Two-Lane Segment Two-lane Undivided	370+60.000	376+83.610	623.61	0.1181	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
71	Rural Two-Lane Segment Two-lane Undivided	376+83.610	378+00.000	116.39	0.0220	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
72	Rural Two-Lane Segment Two-lane Undivided	378+00.000	378+40.000	40.00	0.0076	2019-2022: 2,085; 2023: 2,134	12.00	12.00	0.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
73	Rural Two-Lane Segment Two-lane Undivided	378+40.000	378+60.000	20.00	0.0038	2019-2022: 2,085; 2023: 2,134	12.00	12.00	0.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
74	Rural Two-Lane Segment Two-lane Undivided	378+60.000	379+00.000	40.00	0.0076	2019-2022: 2,085; 2023: 2,134	12.00	12.00	0.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
75	Rural Two-Lane Segment Two-lane Undivided	379+00.000	379+62.690	62.69	0.0119	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
76	Rural Two-Lane Segment Two-lane Undivided	379+62.690	385+22.970	560.28	0.1061	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false				
77	Rural Two-Lane Segment Two-lane Undivided	385+22.970	386+60.000	137.03	0.0260	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
78	Rural Two-Lane Segment Two-lane Undivided	386+60.000	389+50.000	290.00	0.0549	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
79	Rural Two-Lane Segment Two-lane Undivided	389+50.000	394+00.000	450.00	0.0852	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
80	Rural Two-Lane Segment Two-lane Undivided	394+00.000	396+46.150	246.15	0.0466	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
81	Rural Two-Lane Segment Two-lane Undivided	396+46.150	397+00.000	53.85	0.0102	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
82	Rural Two-Lane Segment Two-lane Undivided	397+00.000	399+00.000	200.00	0.0379	2019-2022: 2,085; 2023: 2,134	12.00	12.00	0.00	8.00	0.72	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
83	Rural Two-Lane Segment Two-lane Undivided	399+00.000	405+75.410	675.41	0.1279	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
84	Rural Two-Lane Segment Two-lane Undivided	405+75.410	406+00.000	24.59	0.0047	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false				
85	Rural Two-Lane Segment Two-lane Undivided	406+00.000	407+00.000	100.00	0.0189	2019-2022: 2,085; 2023: 2,134	12.00	12.00	0.00	8.00	0.72	6.2	3	false	0	false	false	false				
86	Rural Two-Lane Segment Two-lane Undivided	407+00.000	443+25.000	3,625.00	0.6866	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false				
87	Rural Two-Lane Segment Two-lane Undivided	443+25.000	445+50.000	225.00	0.0426	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
88	Rural Two-Lane Segment Two-lane Undivided	445+50.000	452+50.000	700.00	0.1326	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
89	Rural Two-Lane Segment Two-lane Undivided	452+50.000	459+00.000	650.00	0.1231	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
90	Rural Two-Lane Segment Two-lane Undivided	459+00.000	460+00.000	100.00	0.0189	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	0.00	-0.96	6.2	3	false	0	false	false	false				
91	Rural Two-Lane Segment Two-lane Undivided	460+00.000	460+58.580	58.58	0.0111	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
92	Rural Two-Lane Segment Two-lane Undivided	460+58.580	485+61.230	2,502.65	0.4740	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-0.01	6.2	3	false	0	false	false	false				
93	Rural Two-Lane Segment Two-lane Undivided	485+61.230	503+00.000	1,738.77	0.3293	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	false	false				
94	Rural Two-Lane Segment Two-lane Undivided	503+00.000	507+00.000	400.00	0.0758	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	false	false				
95	Rural Two-Lane Segment Two-lane Undivided	507+00.000	508+00.000	100.00	0.0189	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	true	false				
96	Rural Two-Lane Segment Two-lane Undivided	508+00.000	508+08.240	8.24	0.0016	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	true	false				
97	Rural Two-Lane Segment Two-lane Undivided	508+08.240	510+30.000	221.76	0.0420	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	false	true	false				
98	Rural Two-Lane Segment Two-lane Undivided	510+30.000	512+00.000	170.00	0.0322	2019-2022: 2,085; 2023: 2,134	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	false	false	false				
99	Rural Two-Lane Segment Two-lane Undivided	512+00.000	513+00.000	100.00	0.0189	2019-2022: 4,325; 2023: 5,081	12.00	12.00	0.00	0.00	0.21	6.2	3	false	0	false	true	false				
100	Rural Two-Lane Segment Two-lane Undivided	513+00.000	515+00.000	200.00	0.0379	2019-2022: 4,325; 2023: 5,081	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	false	true	false				
101	Rural Two-Lane Segment Two-lane Undivided	515+00.000	520+00.000	500.00	0.0947	2019-2022: 4,325; 2023: 5,081	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	true	true	false				
102	Rural Two-Lane Segment Two-lane Undivided	520+00.000	520+49.150	49.15	0.0093	2019-2022: 4,325; 2023: 5,081	12.00	12.00	0.00	0.00	0.21	6.2	3	false	0	false	true	false				
103	Rural Two-Lane Segment Two-lane Undivided	520+49.150	521+00.000	50.85	0.0096	2019-2022: 4,325; 2023: 5,081	12.00	12.00	0.00	0.00	0.21	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
104	Rural Two-Lane Segment Two-lane Undivided	521+00.000	523+38.600	238.60	0.0452	2019-2022: 4,325; 2023: 5,081	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
105	Rural Two-Lane Segment Two-lane Undivided	523+38.600	524+00.000	61.40	0.0116	2019-2022: 4,325; 2023: 5,081	12.00	12.00	8.00	8.00	1.90	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
106	Rural Two-Lane Segment Two-lane Undivided	524+00.000	525+00.000	100.00	0.0189	2019-2022: 4,325; 2023: 5,081	12.00	12.00	0.00	0.00	1.90	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
107	Rural Two-Lane Segment Two-lane Undivided	525+00.000	525+18.580	18.58	0.0035	2019-2022: 4,325; 2023: 5,081	12.00	12.00	8.00	8.00	1.90	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
108	Rural Two-Lane Segment Two-lane Undivided	525+18.580	528+00.000	281.42	0.0533	2019-2022: 4,325; 2023: 5,081	12.00	12.00	8.00	8.00	-0.02	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
109	Rural Two-Lane Segment Two-lane Undivided	528+00.000	529+00.000	100.00	0.0189	2019-2022: 4,325; 2023: 5,081	12.00	12.00	0.00	0.00	-0.02	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
110	Rural Two-Lane Segment Two-lane Undivided	529+00.000	539+00.000	1,000.00	0.1894	2019-2022: 4,325; 2023: 5,081	12.00	12.00	8.00	8.00	-0.02	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
111	Rural Two-Lane Segment Two-lane Undivided	539+00.000	539+50.000	50.00	0.0095	2019-2022: 4,325; 2023: 5,081	12.00	12.00	8.00	8.00	-0.02	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
112	Rural Two-Lane Segment Two-lane Undivided	539+50.000	540+00.000	50.00	0.0095	2019-2022: 4,325; 2023: 5,081	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
113	Rural Two-Lane Segment Two-lane Undivided	540+00.000	540+50.000	50.00	0.0095	2019-2022: 4,325; 2023: 5,081	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
114	Rural Two-Lane Segment Two-lane Undivided	540+50.000	540+74.370	24.37	0.0046	2019-2022: 4,325; 2023: 5,081	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
115	Rural Two-Lane Segment Two-lane Undivided	540+74.370	541+00.000	25.63	0.0049	2019-2022: 4,325; 2023: 5,081	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
116	Rural Two-Lane Segment Two-lane Undivided	541+00.000	541+50.000	50.00	0.0095	2019-2022: 4,325; 2023: 5,081	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
117	Rural Two-Lane Segment Two-lane Undivided	541+50.000	541+70.000	20.00	0.0038	2019-2022: 4,325; 2023: 5,081	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
118	Rural Two-Lane Segment Two-lane Undivided	541+70.000	542+30.000	60.00	0.0114	2019-2022: 4,325; 2023: 5,081	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
119	Rural Two-Lane Segment Two-lane Undivided	542+30.000	542+64.000	34.00	0.0064	2019-2022: 4,325; 2023: 5,081	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false				
120	Rural Two-Lane Segment Two-lane Undivided	542+64.000	543+34.000	70.00	0.0133	2019-2022: 4,325; 2023: 5,081	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false				
121	Rural Two-Lane Segment Two-lane Undivided	543+34.000	544+00.000	66.00	0.0125	2019-2022: 4,325; 2023: 5,081	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false				
122	Rural Two-Lane Segment Two-lane Undivided	544+00.000	545+00.000	100.00	0.0189	2019-2022: 4,325; 2023: 5,081	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
123	Rural Two-Lane Segment Two-lane Undivided	545+00.000	548+23.000	323.00	0.0612	2019-2022: 4,325; 2023: 5,081	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
124	Rural Two-Lane Segment Two-lane Undivided	548+23.000	553+70.000	547.00	0.1036	2019-2022: 4,325; 2023: 5,081	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
125	Rural Two-Lane Segment Two-lane Undivided	553+70.000	554+00.000	30.00	0.0057	2019-2022: 4,325; 2023: 5,081	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	false	false				
126	Rural Two-Lane Segment Two-lane Undivided	554+00.000	554+20.000	20.00	0.0038	2019-2022: 4,325; 2023: 5,081	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	false	false				
127	Rural Two-Lane Segment Two-lane Undivided	554+20.000	560+00.000	580.00	0.1098	2019-2022: 4,325; 2023: 5,081	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
128	Rural Two-Lane Segment Two-lane Undivided	560+00.000	562+58.560	258.56	0.0490	2019-2022: 4,325; 2023: 5,081	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
129	Rural Two-Lane Segment Two-lane Undivided	562+58.560	564+00.000	141.44	0.0268	2019-2022: 4,325; 2023: 5,081	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
130	Rural Two-Lane Segment Two-lane Undivided	564+00.000	565+00.000	100.00	0.0189	2019-2022: 4,325; 2023: 5,081	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
131	Rural Two-Lane Segment Two-lane Undivided	565+00.000	565+77.000	77.00	0.0146	2019-2022: 4,325; 2023: 5,245	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
132	Rural Two-Lane Segment Two-lane Undivided	565+77.000	566+10.000	33.00	0.0063	2019-2022: 4,325; 2023: 5,245	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				
133	Rural Two-Lane Segment Two-lane Undivided	566+10.000	566+50.000	40.00	0.0076	2019-2022: 4,325; 2023: 5,245	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
134	Rural Two-Lane Segment Two-lane Undivided	566+50.000	569+37.000	287.00	0.0544	2019-2022: 4,325; 2023: 5,245	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
135	Rural Two-Lane Segment Two-lane Undivided	569+37.000	569+70.000	33.00	0.0063	2019-2022: 4,325; 2023: 5,245	12.00	12.00	8.00	0.00	-0.20	6.2	3	false	0	false	false	false				
136	Rural Two-Lane Segment Two-lane Undivided	569+70.000	570+00.000	30.00	0.0057	2019-2022: 4,325; 2023: 5,245	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
137	Rural Two-Lane Segment Two-lane Undivided	570+00.000	575+00.000	500.00	0.0947	2019-2022: 4,325; 2023: 5,245	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	true	false	false				
138	Rural Two-Lane Segment Two-lane Undivided	575+00.000	579+50.000	450.00	0.0852	2019-2022: 4,325; 2023: 5,245	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
139	Rural Two-Lane Segment Two-lane Undivided	579+50.000	579+70.000	20.00	0.0038	2019-2022: 4,325; 2023: 5,245	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				
140	Rural Two-Lane Segment Two-lane Undivided	579+70.000	580+10.000	40.00	0.0076	2019-2022: 4,325; 2023: 5,245	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				

Table 4. Evaluation Intersection - Section 1

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
1	West Central School/SD38 (v2)	Rural Two-Lane Intersection Three-Legged w/STOP control	569+50.000	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	2025: 912; 2026: 932; 2027: 951; 2028: 970; 2029: 990; 2030: 1,013; 2031: 1,036; 2032: 1,059; 2033: 1,082; 2034: 1,105; 2035: 1,129; 2036: 1,152; 2037: 1,175; 2038: 1,198; 2039: 1,221; 2040: 1,245; 2041: 1,273; 2042: 1,302; 2043: 1,330; 2044: 1,359; 2045: 1,387; 2046: 1,416; 2047: 1,444; 2048: 1,473; 2049: 1,501; 2050: 1,530	3	Stop-Controlled	0	0	1.37		false
2	2nd/SD38 (v3)	Rural Two-Lane Intersection Four-Legged w/STOP control	566+00.000	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	2025: 1,338; 2026: 1,366; 2027: 1,394; 2028: 1,422; 2029: 1,450; 2030: 1,484; 2031: 1,518; 2032: 1,552; 2033: 1,586; 2034: 1,620; 2035: 1,654; 2036: 1,688; 2037: 1,722; 2038: 1,756; 2039: 1,790; 2040: 1,825; 2041: 1,867; 2042: 1,909; 2043: 1,951; 2044: 1,993; 2045: 2,035; 2046: 2,077; 2047: 2,119; 2048: 2,161; 2049: 2,203; 2050: 2,245	4	Stop-Controlled	1	0	41.37	41.37	false
4	459/SD38 (v2)	Rural Two-Lane Intersection Four-Legged w/STOP control	296+00.000	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	2025: 320; 2026: 329; 2027: 337; 2028: 346; 2029: 355; 2030: 363; 2031: 371; 2032: 379; 2033: 387; 2034: 395; 2035: 404; 2036: 412; 2037: 420; 2038: 428; 2039: 436; 2040: 445; 2041: 455; 2042: 465; 2043: 475; 2044: 485; 2045: 495; 2046: 505; 2047: 515; 2048: 525; 2049: 535; 2050: 545	4	Stop-Controlled	2	0	0.04	0.04	false
5	SD38/SD19_Build (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	187+50.000	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	2025: 2,094; 2026: 2,140; 2027: 2,187; 2028: 2,233; 2029: 2,280; 2030: 2,336; 2031: 2,392; 2032: 2,449; 2033: 2,505; 2034: 2,561; 2035: 2,618; 2036: 2,674; 2037: 2,730; 2038: 2,787; 2039: 2,843; 2040: 2,900; 2041: 2,967; 2042: 3,034; 2043: 3,101; 2044: 3,168; 2045: 3,235; 2046: 3,302; 2047: 3,369; 2048: 3,436; 2049: 3,503; 2050: 3,570	4	Stop-Controlled	2	0	5.84	5.84	false
6	I90 SPEEDWAY/SD38 (v1)	Rural Two-Lane Intersection Three-Legged w/STOP control	378+50.000	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	2025: 260; 2026: 264; 2027: 267; 2028: 271; 2029: 275; 2030: 281; 2031: 288; 2032: 295; 2033: 302; 2034: 309; 2035: 315; 2036: 322; 2037: 329; 2038: 336; 2039: 343; 2040: 350; 2041: 372; 2042: 395; 2043: 417; 2044: 440; 2045: 462; 2046: 485; 2047: 507; 2048: 530; 2049: 552; 2050: 575	3	Stop-Controlled	1	1	5.46		false
7	463/SD38 (v3)	Rural Two-Lane Intersection Four-Legged w/STOP control	512+00.000	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	2025: 3,802; 2026: 3,882; 2027: 3,963; 2028: 4,044; 2029: 4,125; 2030: 4,221; 2031: 4,318; 2032: 4,415; 2033: 4,512; 2034: 4,609; 2035: 4,705; 2036: 4,802; 2037: 4,899; 2038: 4,996; 2039: 5,093; 2040: 5,190; 2041: 5,308; 2042: 5,427; 2043: 5,545; 2044: 5,664; 2045: 5,782; 2046: 5,901; 2047: 6,019; 2048: 6,138; 2049: 6,256; 2050: 6,375	4	Stop-Controlled	1	0	1.43	1.43	true
8	Main Ave/SD38 (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	524+50.000	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	2025: 1,367; 2026: 1,397; 2027: 1,426; 2028: 1,455; 2029: 1,485; 2030: 1,520; 2031: 1,555; 2032: 1,590; 2033: 1,625; 2034: 1,660; 2035: 1,695; 2036: 1,730; 2037: 1,765; 2038: 1,800; 2039: 1,835; 2040: 1,870; 2041: 1,912; 2042: 1,955; 2043: 1,997; 2044: 2,040; 2045: 2,082; 2046: 2,125; 2047: 2,167; 2048: 2,210; 2049: 2,252; 2050: 2,295	4	Stop-Controlled	0	0	11.00	10.54	false
9	Vandemark/SD38 (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	541+50.000	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	2025: 657; 2026: 672; 2027: 686; 2028: 700; 2029: 715; 2030: 731; 2031: 747; 2032: 764; 2033: 780; 2034: 796; 2035: 813; 2036: 829; 2037: 845; 2038: 862; 2039: 878; 2040: 895; 2041: 915; 2042: 936; 2043: 956; 2044: 977; 2045: 997; 2046: 1,018; 2047: 1,038; 2048: 1,059; 2049: 1,079; 2050: 1,100	4	Stop-Controlled	1	0	48.63	48.63	false

Table 5. Crash History Intersection - Section 1

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
1	West Central School/SD38 (v2)	Rural Two-Lane Intersection Three-Legged w/STOP control	569+50.000	2019-2022: 4,325; 2023: 5,245	2019-2022: 855; 2023: 874	3	Stop-Controlled	0	0	1.37		false
2	2nd/SD38 (v3)	Rural Two-Lane Intersection Four-Legged w/STOP control	566+00.000	2019-2022: 4,325; 2023: 5,245	2019-2022: 1,255; 2023: 1,282	4	Stop-Controlled	1	0	41.37	41.37	false
4	459/SD38 (v2)	Rural Two-Lane Intersection Four-Legged w/STOP control	296+00.000	2019-2022: 2,085; 2023: 2,134	2019-2022: 295; 2023: 303	4	Stop-Controlled	2	0	0.04	0.04	false
5	SD38/SD19_Build (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	187+50.000	2019-2022: 2,085; 2023: 2,134	2019-2022: 1,955; 2023: 2,001	4	Stop-Controlled	2	0	5.84	5.84	false
6	I90 SPEEDWAY/SD38 (v1)	Rural Two-Lane Intersection Three-Legged w/STOP control	378+50.000	2019-2022: 2,085; 2023: 2,134	2019-2022: 250; 2023: 253	3	Stop-Controlled	1	1	5.46		false
7	463/SD38 (v3)	Rural Two-Lane Intersection Four-Legged w/STOP control	512+00.000	2019-2022: 4,325; 2023: 5,081	2019-2022: 3,560; 2023: 3,640	4	Stop-Controlled	1	0	1.43	1.43	true
8	Main Ave/SD38 (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	524+50.000	2019-2022: 4,325; 2023: 5,081	2019-2022: 1,280; 2023: 1,309	4	Stop-Controlled	0	0	11.00	10.54	false
9	Vandemark/SD38 (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	541+50.000	2019-2022: 4,325; 2023: 5,081	2019-2022: 615; 2023: 629	4	Stop-Controlled	1	0	48.63	48.63	false

Table 6. Expected Highway Crash Rates and Frequencies Summary (Section 1)

First Year of Analysis	**2025**
Last Year of Analysis	**2050**
Evaluated Length (mi)	**7.7398**
Average Future Road AADT (vpd)	**4,284**
Expected Crashes	
Total Crashes	**422.63**
Fatal and Injury Crashes	**177.58**
Property-Damage-Only Crashes	**245.06**
Percent of Total Expected Crashes	
Percent Fatal and Injury Crashes (%)	**42**
Percent Property-Damage-Only Crashes (%)	**58**
Expected Crash Rate	
Crash Rate (crashes/mi/yr)	**2.1002**
FI Crash Rate (crashes/mi/yr)	**0.8824**
PDO Crash Rate (crashes/mi/yr)	**1.2178**
Expected Travel Crash Rate	
Total Travel (million veh-mi)	**314.63**
Travel Crash Rate (crashes/million veh-mi)	**1.34**
Travel FI Crash Rate (crashes/million veh-mi)	**0.56**
Travel PDO Crash Rate (crashes/million veh-mi)	**0.78**

Table 7. Expected Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
1	171+44.000	172+42.000	0.0186	0.237	0.402	0.0091	0.0033	0.0058	0.0155	0.0050	0.0105	-0.0064	-0.0017	-0.0047	0.4911	0.45	
2	172+42.000	174+52.690	0.0399	0.481	0.786	0.0185	0.0067	0.0118	0.0302	0.0097	0.0205	-0.0117	-0.0030	-0.0087	0.4638	0.43	
3	174+52.690	176+25.000	0.0326	0.498	0.980	0.0192	0.0072	0.0120	0.0377	0.0121	0.0256	-0.0185	-0.0049	-0.0136	0.5873	0.54	
4	176+25.000	178+85.250	0.0493	0.753	1.479	0.0289	0.0108	0.0181	0.0569	0.0183	0.0386	-0.0280	-0.0074	-0.0205	0.5873	0.54	
5	178+85.250	183+75.370	0.0928	1.119	1.829	0.0431	0.0155	0.0276	0.0703	0.0226	0.0478	-0.0273	-0.0071	-0.0202	0.4638	0.43	
6	183+75.370	184+00.000	0.0047	0.056	0.092	0.0022	0.0008	0.0014	0.0035	0.0011	0.0024	-0.0014	-0.0004	-0.0010	0.4638	0.43	
7	184+00.000	184+45.000	0.0085	0.103	0.168	0.0040	0.0014	0.0025	0.0065	0.0021	0.0044	-0.0025	-0.0007	-0.0019	0.4638	0.43	
8	184+45.000	185+20.000	0.0142	0.171	0.280	0.0066	0.0024	0.0042	0.0108	0.0035	0.0073	-0.0042	-0.0011	-0.0031	0.4638	0.43	
9	185+20.000	186+60.000	0.0265	0.320	0.522	0.0123	0.0044	0.0079	0.0201	0.0064	0.0136	-0.0078	-0.0020	-0.0058	0.4638	0.43	
10	186+60.000	187+20.000	0.0114	0.137	0.224	0.0053	0.0019	0.0034	0.0086	0.0028	0.0058	-0.0033	-0.0009	-0.0025	0.4638	0.43	
11	187+20.000	187+60.000	0.0076	0.110	0.208	0.0042	0.0016	0.0027	0.0080	0.0026	0.0054	-0.0037	-0.0010	-0.0028	0.5601	0.52	
SD38/SD19_Build (v1)	187+50.000			18.347	41.067	0.7056	0.3225	0.3831	1.5795	0.6808	0.8987	-0.8739	-0.3582	-0.5156			0.34
12	187+60.000	190+00.000	0.0455	0.548	0.895	0.0211	0.0076	0.0135	0.0344	0.0111	0.0234	-0.0134	-0.0035	-0.0099	0.4638	0.43	
13	190+00.000	192+00.000	0.0379	0.457	0.746	0.0176	0.0063	0.0112	0.0287	0.0092	0.0195	-0.0111	-0.0029	-0.0082	0.4638	0.43	
14	192+00.000	192+39.270	0.0074	0.090	0.146	0.0034	0.0012	0.0022	0.0056	0.0018	0.0038	-0.0022	-0.0006	-0.0016	0.4638	0.43	
15	192+39.270	193+60.000	0.0229	0.276	0.451	0.0106	0.0038	0.0068	0.0173	0.0056	0.0118	-0.0067	-0.0017	-0.0050	0.4638	0.43	
16	193+60.000	197+65.000	0.0767	0.925	1.511	0.0356	0.0128	0.0228	0.0581	0.0187	0.0395	-0.0225	-0.0059	-0.0167	0.4638	0.43	
17	197+65.000	199+00.000	0.0256	0.308	0.504	0.0119	0.0043	0.0076	0.0194	0.0062	0.0132	-0.0075	-0.0020	-0.0056	0.4638	0.43	
18	199+00.000	201+63.750	0.0500	0.602	0.984	0.0232	0.0083	0.0148	0.0379	0.0121	0.0257	-0.0147	-0.0038	-0.0109	0.4638	0.43	
19	201+63.750	202+00.000	0.0069	0.083	0.135	0.0032	0.0011	0.0020	0.0052	0.0017	0.0035	-0.0020	-0.0005	-0.0015	0.4638	0.43	
20	202+00.000	207+00.000	0.0947	1.142	1.866	0.0439	0.0158	0.0281	0.0718	0.0230	0.0487	-0.0278	-0.0072	-0.0206	0.4638	0.43	
21	207+00.000	207+49.760	0.0094	0.114	0.186	0.0044	0.0016	0.0028	0.0071	0.0023	0.0048	-0.0028	-0.0007	-0.0021	0.4638	0.43	
22	207+49.760	217+74.250	0.1940	2.340	3.823	0.0900	0.0324	0.0576	0.1470	0.0472	0.0998	-0.0570	-0.0148	-0.0422	0.4638	0.43	
23	217+74.250	221+00.000	0.0617	3.590	1.215	0.1381	0.0144	0.1237	0.0467	0.0150	0.0317	0.0913	-0.0006	0.0919	2.2379	2.06	
24	221+00.000	226+00.000	0.0947	1.142	1.866	0.0439	0.0158	0.0281	0.0718	0.0230	0.0487	-0.0278	-0.0072	-0.0206	0.4638	0.43	
25	226+00.000	230+66.250	0.0883	1.065	1.740	0.0410	0.0147	0.0262	0.0669	0.0215	0.0454	-0.0260	-0.0067	-0.0192	0.4638	0.43	
26	230+66.250	231+39.700	0.0139	0.188	0.333	0.0072	0.0026	0.0046	0.0128	0.0041	0.0087	-0.0056	-0.0015	-0.0041	0.5197	0.48	
27	231+39.700	235+00.000	0.0682	0.922	1.631	0.0355	0.0130	0.0225	0.0627	0.0201	0.0426	-0.0273	-0.0072	-0.0201	0.5197	0.48	
28	235+00.000	241+61.390	0.1253	4.881	2.994	0.1877	0.1173	0.0705	0.1152	0.0370	0.0782	0.0726	0.0803	-0.0077	1.4988	1.38	
29	241+61.390	242+00.000	0.0073	0.099	0.175	0.0038	0.0014	0.0024	0.0067	0.0022	0.0046	-0.0029	-0.0008	-0.0022	0.5197	0.48	
30	242+00.000	245+14.280	0.0595	0.804	1.423	0.0309	0.0113	0.0196	0.0547	0.0176	0.0372	-0.0238	-0.0062	-0.0175	0.5197	0.48	
31	245+14.280	246+55.100	0.0267	0.322	0.525	0.0124	0.0044	0.0079	0.0202	0.0065	0.0137	-0.0078	-0.0020	-0.0058	0.4638	0.43	
32	246+55.100	248+00.000	0.0274	0.331	0.541	0.0127	0.0046	0.0081	0.0208	0.0067	0.0141	-0.0081	-0.0021	-0.0060	0.4638	0.43	
33	248+00.000	249+00.000	0.0189	3.713	0.519	0.1428	0.0060	0.1368	0.0200	0.0064	0.0136	0.1228	-0.0004	0.1233	7.5395	6.96	
34	249+00.000	251+21.980	0.0420	0.507	0.828	0.0195	0.0070	0.0125	0.0319	0.0102	0.0216	-0.0124	-0.0032	-0.0091	0.4638	0.43	
35	251+21.980	252+40.240	0.0224	0.286	0.485	0.0110	0.0040	0.0070	0.0187	0.0060	0.0127	-0.0077	-0.0020	-0.0057	0.4911	0.45	
36	252+40.240	263+22.600	0.2050	2.472	4.038	0.0951	0.0342	0.0609	0.1553	0.0499	0.1055	-0.0603	-0.0157	-0.0446	0.4638	0.43	
37	263+22.600	272+66.740	0.1788	2.346	4.061	0.0902	0.0329	0.0574	0.1562	0.0501	0.1060	-0.0659	-0.0173	-0.0487	0.5047	0.47	
38	272+66.740	280+00.000	0.1389	1.675	2.736	0.0644	0.0232	0.0412	0.1052	0.0338	0.0715	-0.0408	-0.0106	-0.0302	0.4638	0.43	

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
39	280+00.000	283+15.050	0.0597	0.720	1.175	0.0277	0.0100	0.0177	0.0452	0.0145	0.0307	-0.0175	-0.0046	-0.0130	0.4638	0.43	
40	283+15.050	284+08.540	0.0177	0.226	0.384	0.0087	0.0032	0.0055	0.0148	0.0047	0.0100	-0.0061	-0.0016	-0.0045	0.4911	0.45	
41	284+08.540	288+50.000	0.0836	3.854	1.647	0.1482	0.0190	0.1292	0.0634	0.0203	0.0430	0.0849	-0.0013	0.0862	1.7729	1.64	
42	288+50.000	289+00.000	0.0095	0.114	0.187	0.0044	0.0016	0.0028	0.0072	0.0023	0.0049	-0.0028	-0.0007	-0.0021	0.4638	0.43	
43	289+00.000	295+90.000	0.1307	1.576	2.575	0.0606	0.0218	0.0388	0.0990	0.0318	0.0672	-0.0384	-0.0100	-0.0284	0.4638	0.43	
44	295+90.000	296+00.000	0.0019	0.028	0.052	0.0011	0.0004	0.0007	0.0020	0.0006	0.0014	-0.0009	-0.0002	-0.0007	0.5601	0.52	
459/SD38 (v2)	296+00.000			11.417	12.695	0.4391	0.1711	0.2680	0.4883	0.2104	0.2778	-0.0492	-0.0394	-0.0098			0.37
45	296+00.000	296+10.000	0.0019	0.028	0.052	0.0011	0.0004	0.0007	0.0020	0.0006	0.0014	-0.0009	-0.0002	-0.0007	0.5601	0.52	
46	296+10.000	296+96.520	0.0164	0.198	0.323	0.0076	0.0027	0.0049	0.0124	0.0040	0.0084	-0.0048	-0.0013	-0.0036	0.4638	0.43	
47	296+96.520	298+33.660	0.0260	0.313	0.512	0.0120	0.0043	0.0077	0.0197	0.0063	0.0134	-0.0076	-0.0020	-0.0057	0.4638	0.43	
48	298+33.660	303+50.000	0.0978	1.179	1.927	0.0454	0.0163	0.0290	0.0741	0.0238	0.0503	-0.0287	-0.0075	-0.0213	0.4638	0.43	
49	303+50.000	304+50.000	0.0189	0.228	0.373	0.0088	0.0032	0.0056	0.0144	0.0046	0.0097	-0.0056	-0.0014	-0.0041	0.4638	0.43	
50	304+50.000	305+02.039	0.0099	0.119	0.194	0.0046	0.0016	0.0029	0.0075	0.0024	0.0051	-0.0029	-0.0008	-0.0021	0.4638	0.43	
51	305+02.039	309+35.490	0.0821	0.990	1.617	0.0381	0.0137	0.0244	0.0622	0.0200	0.0422	-0.0241	-0.0063	-0.0179	0.4638	0.43	
52	309+35.490	311+70.000	0.0444	0.536	0.875	0.0206	0.0074	0.0132	0.0337	0.0108	0.0229	-0.0131	-0.0034	-0.0097	0.4638	0.43	
53	311+70.000	313+25.000	0.0294	0.354	0.578	0.0136	0.0049	0.0087	0.0222	0.0071	0.0151	-0.0086	-0.0022	-0.0064	0.4638	0.43	
54	313+25.000	323+00.000	0.1847	2.227	3.638	0.0856	0.0308	0.0548	0.1399	0.0449	0.0950	-0.0543	-0.0141	-0.0402	0.4638	0.43	
55	323+00.000	323+26.980	0.0051	0.062	0.101	0.0024	0.0009	0.0015	0.0039	0.0012	0.0026	-0.0015	-0.0004	-0.0011	0.4638	0.43	
56	323+26.980	328+89.230	0.1065	1.284	2.098	0.0494	0.0178	0.0316	0.0807	0.0259	0.0548	-0.0313	-0.0081	-0.0232	0.4638	0.43	
57	328+89.230	329+81.740	0.0175	0.211	0.345	0.0081	0.0029	0.0052	0.0133	0.0043	0.0090	-0.0052	-0.0013	-0.0038	0.4638	0.43	
58	329+81.740	333+24.920	0.0650	0.934	1.738	0.0359	0.0133	0.0226	0.0669	0.0215	0.0454	-0.0309	-0.0082	-0.0228	0.5529	0.51	
59	333+24.920	334+00.000	0.0142	0.204	0.380	0.0079	0.0029	0.0050	0.0146	0.0047	0.0099	-0.0068	-0.0018	-0.0050	0.5529	0.51	
60	334+00.000	335+39.960	0.0265	7.167	0.709	0.2756	0.0083	0.2673	0.0273	0.0088	0.0185	0.2484	-0.0004	0.2488	10.3988	9.59	
61	335+39.960	342+39.000	0.1324	1.597	2.608	0.0614	0.0221	0.0393	0.1003	0.0322	0.0681	-0.0389	-0.0101	-0.0288	0.4638	0.43	
62	342+39.000	343+00.000	0.0116	0.139	0.228	0.0054	0.0019	0.0034	0.0088	0.0028	0.0059	-0.0034	-0.0009	-0.0025	0.4638	0.43	
63	343+00.000	351+20.000	0.1553	4.718	3.060	0.1815	0.1064	0.0751	0.1177	0.0378	0.0799	0.0638	0.0686	-0.0048	1.1686	1.08	
64	351+20.000	352+00.000	0.0152	0.221	0.415	0.0085	0.0031	0.0053	0.0160	0.0051	0.0108	-0.0075	-0.0020	-0.0055	0.5601	0.52	
65	352+00.000	352+20.000	0.0038	0.055	0.104	0.0021	0.0008	0.0013	0.0040	0.0013	0.0027	-0.0019	-0.0005	-0.0014	0.5601	0.52	
66	352+20.000	362+50.000	0.1951	2.352	3.843	0.0905	0.0325	0.0579	0.1478	0.0474	0.1004	-0.0573	-0.0149	-0.0424	0.4638	0.43	
67	362+50.000	369+14.990	0.1259	1.519	2.481	0.0584	0.0210	0.0374	0.0954	0.0306	0.0648	-0.0370	-0.0096	-0.0274	0.4638	0.43	
68	369+14.990	370+30.000	0.0218	0.304	0.553	0.0117	0.0043	0.0074	0.0213	0.0068	0.0144	-0.0096	-0.0025	-0.0070	0.5374	0.50	
69	370+30.000	370+60.000	0.0057	0.079	0.144	0.0031	0.0011	0.0019	0.0055	0.0018	0.0038	-0.0025	-0.0007	-0.0018	0.5374	0.50	
70	370+60.000	376+83.610	0.1181	4.948	2.998	0.1903	0.1210	0.0693	0.1153	0.0370	0.0783	0.0750	0.0840	-0.0090	1.6113	1.49	
71	376+83.610	378+00.000	0.0220	0.308	0.559	0.0118	0.0044	0.0075	0.0215	0.0069	0.0146	-0.0097	-0.0025	-0.0071	0.5374	0.50	
72	378+00.000	378+40.000	0.0076	0.116	0.230	0.0045	0.0017	0.0028	0.0088	0.0028	0.0060	-0.0044	-0.0012	-0.0032	0.5906	0.55	
73	378+40.000	378+60.000	0.0038	0.058	0.115	0.0022	0.0008	0.0014	0.0044	0.0014	0.0030	-0.0022	-0.0006	-0.0016	0.5906	0.55	
I90 SPEEDWAY/SD38 (v1)	378+50.000			4.676	6.719	0.1798	0.0773	0.1025	0.2584	0.1073	0.1512	-0.0786	-0.0299	-0.0487			0.16
74	378+60.000	379+00.000	0.0076	0.116	0.230	0.0045	0.0017	0.0028	0.0088	0.0028	0.0060	-0.0044	-0.0012	-0.0032	0.5906	0.55	
75	379+00.000	379+62.690	0.0119	0.166	0.301	0.0064	0.0023	0.0040	0.0116	0.0037	0.0079	-0.0052	-0.0014	-0.0038	0.5374	0.50	
76	379+62.690	385+22.970	0.1061	4.125	2.091	0.1587	0.1022	0.0564	0.0804	0.0258	0.0546	0.0783	0.0764	0.0018	1.4952	1.38	
77	385+22.970	386+60.000	0.0260	0.358	0.643	0.0138	0.0051	0.0087	0.0247	0.0079	0.0168	-0.0110	-0.0029	-0.0081	0.5303	0.49	
78	386+60.000	389+50.000	0.0549	0.757	1.361	0.0291	0.0107	0.0184	0.0524	0.0168	0.0355	-0.0232	-0.0061	-0.0171	0.5303	0.49	

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
79	389+50.000	394+00.000	0.0852	1.175	2.112	0.0452	0.0166	0.0286	0.0812	0.0261	0.0552	-0.0360	-0.0095	-0.0266	0.5303	0.49	
80	394+00.000	396+46.150	0.0466	0.643	1.155	0.0247	0.0091	0.0156	0.0444	0.0143	0.0302	-0.0197	-0.0052	-0.0145	0.5303	0.49	
81	396+46.150	397+00.000	0.0102	0.141	0.253	0.0054	0.0020	0.0034	0.0097	0.0031	0.0066	-0.0043	-0.0011	-0.0032	0.5303	0.49	
82	397+00.000	399+00.000	0.0379	0.575	1.122	0.0221	0.0083	0.0138	0.0432	0.0139	0.0293	-0.0211	-0.0056	-0.0155	0.5834	0.54	
83	399+00.000	405+75.410	0.1279	1.764	3.170	0.0678	0.0249	0.0429	0.1219	0.0391	0.0828	-0.0541	-0.0142	-0.0399	0.5303	0.49	
84	405+75.410	406+00.000	0.0047	0.056	0.092	0.0022	0.0008	0.0014	0.0035	0.0011	0.0024	-0.0014	-0.0004	-0.0010	0.4638	0.43	
85	406+00.000	407+00.000	0.0189	0.254	0.446	0.0098	0.0036	0.0062	0.0172	0.0055	0.0116	-0.0074	-0.0019	-0.0055	0.5153	0.47	
86	407+00.000	443+25.000	0.6866	22.508	13.526	0.8657	0.3493	0.5164	0.5202	0.1670	0.3532	0.3455	0.1823	0.1632	1.2609	1.16	
87	443+25.000	445+50.000	0.0426	0.514	0.840	0.0198	0.0071	0.0127	0.0323	0.0104	0.0219	-0.0125	-0.0033	-0.0093	0.4638	0.43	
88	445+50.000	452+50.000	0.1326	4.444	2.612	0.1709	0.1042	0.0667	0.1005	0.0322	0.0682	0.0705	0.0720	-0.0015	1.2894	1.19	
89	452+50.000	459+00.000	0.1231	1.484	2.425	0.0571	0.0205	0.0366	0.0933	0.0299	0.0633	-0.0362	-0.0094	-0.0268	0.4638	0.43	
90	459+00.000	460+00.000	0.0189	0.254	0.446	0.0098	0.0036	0.0062	0.0172	0.0055	0.0116	-0.0074	-0.0019	-0.0055	0.5153	0.47	
91	460+00.000	460+58.580	0.0111	0.134	0.219	0.0051	0.0019	0.0033	0.0084	0.0027	0.0057	-0.0033	-0.0008	-0.0024	0.4638	0.43	
92	460+58.580	485+61.230	0.4740	8.561	9.338	0.3293	0.0898	0.2395	0.3592	0.1153	0.2439	-0.0299	-0.0255	-0.0044	0.6947	0.64	
93	485+61.230	503+00.000	0.3293	3.971	6.488	0.1527	0.0549	0.0978	0.2495	0.0801	0.1694	-0.0968	-0.0252	-0.0716	0.4638	0.43	
94	503+00.000	507+00.000	0.0758	0.913	1.492	0.0351	0.0126	0.0225	0.0574	0.0184	0.0390	-0.0223	-0.0058	-0.0165	0.4638	0.43	
95	507+00.000	508+00.000	0.0189	0.217	0.344	0.0083	0.0030	0.0054	0.0132	0.0042	0.0090	-0.0049	-0.0013	-0.0036	0.4408	0.41	
96	508+00.000	508+08.240	0.0016	0.018	0.028	0.0007	0.0002	0.0004	0.0011	0.0003	0.0007	-0.0004	-0.0001	-0.0003	0.4408	0.41	
97	508+08.240	510+30.000	0.0420	0.481	0.762	0.0185	0.0066	0.0119	0.0293	0.0094	0.0199	-0.0108	-0.0028	-0.0080	0.4408	0.41	
98	510+30.000	512+00.000	0.0322	0.388	0.634	0.0149	0.0054	0.0096	0.0244	0.0078	0.0166	-0.0095	-0.0025	-0.0070	0.4638	0.43	
463/SD38 (v3)	512+00.000			59.412	153.769	2.2851	1.1850	1.1001	5.9142	2.5490	3.3652	-3.6291	-1.3640	-2.2651			0.60
99	512+00.000	513+00.000	0.0189	0.613	1.666	0.0236	0.0094	0.0142	0.0641	0.0206	0.0435	-0.0405	-0.0112	-0.0293	1.2446	0.32	
100	513+00.000	515+00.000	0.0379	1.072	2.395	0.0412	0.0158	0.0254	0.0921	0.0296	0.0626	-0.0509	-0.0138	-0.0372	1.0882	0.28	
101	515+00.000	520+00.000	0.0947	2.640	5.796	0.1015	0.0388	0.0627	0.2229	0.0716	0.1514	-0.1214	-0.0327	-0.0886	1.0722	0.28	
102	520+00.000	520+49.150	0.0093	0.301	0.819	0.0116	0.0046	0.0070	0.0315	0.0101	0.0214	-0.0199	-0.0055	-0.0144	1.2446	0.32	
103	520+49.150	521+00.000	0.0096	0.335	1.049	0.0129	0.0053	0.0076	0.0403	0.0130	0.0274	-0.0274	-0.0077	-0.0197	1.3395	0.35	
104	521+00.000	523+38.600	0.0452	1.381	3.425	0.0531	0.0208	0.0323	0.1317	0.0423	0.0895	-0.0786	-0.0215	-0.0571	1.1753	0.30	
105	523+38.600	524+00.000	0.0116	0.355	0.881	0.0137	0.0053	0.0083	0.0339	0.0109	0.0230	-0.0202	-0.0055	-0.0147	1.1753	0.30	
106	524+00.000	525+00.000	0.0189	0.660	2.063	0.0254	0.0103	0.0150	0.0793	0.0255	0.0539	-0.0540	-0.0151	-0.0388	1.3395	0.35	
Main Ave/SD38 (v1)	524+50.000			41.391	132.778	1.5920	0.6668	0.9251	5.1069	2.2011	2.9058	-3.5149	-1.5342	-1.9807			0.37
107	525+00.000	525+18.580	0.0035	0.107	0.267	0.0041	0.0016	0.0025	0.0103	0.0033	0.0070	-0.0061	-0.0017	-0.0044	1.1753	0.30	
108	525+18.580	528+00.000	0.0533	1.629	4.040	0.0626	0.0245	0.0381	0.1554	0.0499	0.1055	-0.0927	-0.0254	-0.0674	1.1753	0.30	
109	528+00.000	529+00.000	0.0189	0.660	2.063	0.0254	0.0103	0.0150	0.0793	0.0255	0.0539	-0.0540	-0.0151	-0.0388	1.3395	0.35	
110	529+00.000	539+00.000	0.1894	5.787	14.355	0.2226	0.0871	0.1355	0.5521	0.1772	0.3749	-0.3295	-0.0902	-0.2394	1.1753	0.30	
111	539+00.000	539+50.000	0.0095	0.293	0.742	0.0113	0.0044	0.0068	0.0285	0.0092	0.0194	-0.0172	-0.0047	-0.0125	1.1907	0.31	
112	539+50.000	540+00.000	0.0095	0.293	0.742	0.0113	0.0044	0.0068	0.0285	0.0092	0.0194	-0.0172	-0.0047	-0.0125	1.1907	0.31	
113	540+00.000	540+50.000	0.0095	0.293	0.742	0.0113	0.0044	0.0068	0.0285	0.0092	0.0194	-0.0172	-0.0047	-0.0125	1.1907	0.31	
114	540+50.000	540+74.370	0.0046	0.161	0.503	0.0062	0.0025	0.0037	0.0193	0.0062	0.0131	-0.0132	-0.0037	-0.0095	1.3395	0.35	
115	540+74.370	541+00.000	0.0049	0.157	0.427	0.0060	0.0024	0.0036	0.0164	0.0053	0.0111	-0.0104	-0.0029	-0.0075	1.2446	0.32	
116	541+00.000	541+50.000	0.0095	0.306	0.833	0.0118	0.0047	0.0071	0.0320	0.0103	0.0218	-0.0202	-0.0056	-0.0147	1.2446	0.32	
Vandemark/SD38 (v1)	541+50.000			27.929	74.904	1.0742	0.4965	0.5777	2.8809	1.2417	1.6393	-1.8068	-0.7452	-1.0616			0.27
117	541+50.000	541+70.000	0.0038	0.123	0.333	0.0047	0.0019	0.0028	0.0128	0.0041	0.0087	-0.0081	-0.0022	-0.0059	1.2446	0.32	

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
118	541+70.000	542+30.000	0.0114	0.368	1.000	0.0141	0.0056	0.0085	0.0384	0.0123	0.0261	-0.0243	-0.0067	-0.0176	1.2446	0.32	
119	542+30.000	542+64.000	0.0064	0.182	0.407	0.0070	0.0027	0.0043	0.0157	0.0050	0.0106	-0.0087	-0.0023	-0.0063	1.0882	0.28	
120	542+64.000	543+34.000	0.0133	0.375	0.838	0.0144	0.0055	0.0089	0.0322	0.0104	0.0219	-0.0178	-0.0048	-0.0130	1.0882	0.28	
121	543+34.000	544+00.000	0.0125	0.354	0.790	0.0136	0.0052	0.0084	0.0304	0.0098	0.0206	-0.0168	-0.0045	-0.0123	1.0882	0.28	
122	544+00.000	545+00.000	0.0189	0.555	1.300	0.0214	0.0083	0.0131	0.0500	0.0160	0.0339	-0.0286	-0.0078	-0.0208	1.1278	0.29	
123	545+00.000	548+23.000	0.0612	1.794	4.198	0.0690	0.0267	0.0423	0.1615	0.0518	0.1096	-0.0925	-0.0251	-0.0673	1.1278	0.29	
124	548+23.000	553+70.000	0.1036	9.958	7.109	0.3830	0.2582	0.1248	0.2734	0.0878	0.1857	0.1096	0.1704	-0.0609	3.6968	0.96	
125	553+70.000	554+00.000	0.0057	0.189	0.542	0.0073	0.0029	0.0044	0.0209	0.0067	0.0142	-0.0136	-0.0038	-0.0098	1.2816	0.33	
126	554+00.000	554+20.000	0.0038	0.126	0.361	0.0049	0.0019	0.0029	0.0139	0.0045	0.0094	-0.0090	-0.0025	-0.0065	1.2816	0.33	
127	554+20.000	560+00.000	0.1098	3.221	7.538	0.1239	0.0479	0.0759	0.2899	0.0931	0.1969	-0.1660	-0.0451	-0.1209	1.1278	0.29	
128	560+00.000	562+58.560	0.0490	1.436	3.360	0.0552	0.0214	0.0339	0.1292	0.0415	0.0878	-0.0740	-0.0201	-0.0539	1.1278	0.29	
129	562+58.560	564+00.000	0.0268	0.785	1.838	0.0302	0.0117	0.0185	0.0707	0.0227	0.0480	-0.0405	-0.0110	-0.0295	1.1278	0.29	
130	564+00.000	565+00.000	0.0189	0.555	1.300	0.0214	0.0083	0.0131	0.0500	0.0160	0.0339	-0.0286	-0.0078	-0.0208	1.1278	0.29	
131	565+00.000	565+77.000	0.0146	0.482	1.133	0.0185	0.0072	0.0114	0.0436	0.0140	0.0296	-0.0250	-0.0068	-0.0182	1.2719	0.29	
132	565+77.000	566+10.000	0.0063	0.235	0.675	0.0090	0.0036	0.0054	0.0260	0.0083	0.0176	-0.0170	-0.0047	-0.0122	1.4446	0.33	
2nd/SD38 (v3)	566+00.000			50.602	119.976	1.9462	0.7275	1.2187	4.6145	1.9888	2.6256	-2.6682	-1.2613	-1.4069			0.40
133	566+10.000	566+50.000	0.0076	0.284	0.819	0.0109	0.0044	0.0065	0.0315	0.0101	0.0214	-0.0205	-0.0057	-0.0148	1.4446	0.33	
134	566+50.000	569+37.000	0.0544	17.406	4.224	0.6695	0.2593	0.4102	0.1625	0.0522	0.1103	0.5070	0.2071	0.2999	12.3164	2.82	
135	569+37.000	569+70.000	0.0063	0.222	0.581	0.0085	0.0034	0.0052	0.0223	0.0072	0.0152	-0.0138	-0.0038	-0.0100	1.3670	0.31	
West Central School/SD38 (v2)	569+50.000			18.448	73.624	0.7095	0.3302	0.3794	2.8317	1.1752	1.6565	-2.1222	-0.8450	-1.2772			0.15
136	569+70.000	570+00.000	0.0057	0.188	0.442	0.0072	0.0028	0.0044	0.0170	0.0055	0.0115	-0.0098	-0.0027	-0.0071	1.2719	0.29	
137	570+00.000	575+00.000	0.0947	3.088	7.122	0.1188	0.0458	0.0729	0.2739	0.0879	0.1860	-0.1552	-0.0421	-0.1131	1.2542	0.29	
138	575+00.000	579+50.000	0.0852	2.818	6.623	0.1084	0.0420	0.0664	0.2547	0.0818	0.1730	-0.1463	-0.0398	-0.1066	1.2719	0.29	
139	579+50.000	579+70.000	0.0038	0.142	0.409	0.0055	0.0022	0.0033	0.0157	0.0051	0.0107	-0.0103	-0.0029	-0.0074	1.4446	0.33	
140	579+70.000	580+10.000	0.0076	0.284	0.819	0.0109	0.0044	0.0065	0.0315	0.0101	0.0214	-0.0205	-0.0057	-0.0148	1.4446	0.33	
All Segments			7.7398	190.411	230.845	7.3235	2.8529	4.4706	8.8786	2.8500	6.0286	-1.5551	0.0029	-1.5580	0.9462	0.60	
All Intersections				232.221	615.534	8.9316	3.9769	4.9547	23.6744	10.1542	13.5202	-14.7428	-6.1773	-8.5655			0.34
Total			7.7398	422.632	846.378	16.2551	6.8299	9.4252	32.5530	13.0043	19.5488	-16.2979	-6.1744	-10.1235	2.1002		

Table 8. Expected Crash Frequencies and Rates by Horizontal Design Element (Section 1)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)
Tangent	171+44.000	174+52.690	0.0585	0.718	1.188	0.0276	0.0100	0.0177	0.0457	0.0147	0.0310	-0.0181	-0.0047	-0.0134	0.4725	0.44
Simple Curve 1	174+52.690	178+85.250	0.0819	1.251	2.459	0.0481	0.0180	0.0301	0.0946	0.0304	0.0642	-0.0465	-0.0124	-0.0341	0.5873	0.54
Tangent	178+85.250	230+66.250	0.9812	14.697	19.390	0.5653	0.1681	0.3971	0.7458	0.2394	0.5064	-0.1805	-0.0713	-0.1092	0.5761	0.53
Simple Curve 2	230+66.250	245+14.280	0.2742	6.894	6.555	0.2652	0.1456	0.1196	0.2521	0.0809	0.1712	0.0131	0.0647	-0.0516	0.9669	0.89
Tangent	245+14.280	263+22.600	0.3425	7.630	6.937	0.2935	0.0602	0.2332	0.2668	0.0856	0.1812	0.0266	-0.0254	0.0521	0.8569	0.79
Simple Curve 3	263+22.600	272+66.740	0.1788	2.346	4.061	0.0902	0.0329	0.0574	0.1562	0.0501	0.1060	-0.0659	-0.0173	-0.0487	0.5047	0.47
Tangent	272+66.740	296+96.470	0.4602	8.417	9.130	0.3237	0.0822	0.2415	0.3511	0.1127	0.2384	-0.0274	-0.0305	0.0031	0.7035	0.65
Simple Curve 4	296+96.470	296+96.520	0.0000	0.000	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0000	-0.0000	-0.0000	0.4638	0.43
Tangent	296+96.520	329+81.740	0.6222	7.503	12.258	0.2886	0.1038	0.1848	0.4715	0.1513	0.3201	-0.1829	-0.0475	-0.1354	0.4638	0.43
Simple Curve 5	329+81.740	335+39.960	0.1057	8.306	2.828	0.3194	0.0245	0.2949	0.1088	0.0349	0.0738	0.2107	-0.0104	0.2211	3.0215	2.79
Tangent	335+39.960	369+14.990	0.6392	10.601	12.739	0.4077	0.1879	0.2199	0.4900	0.1573	0.3327	-0.0822	0.0306	-0.1128	0.6379	0.59
Simple Curve 6	369+14.990	379+62.690	0.1984	6.096	5.131	0.2345	0.1373	0.0972	0.1973	0.0633	0.1340	0.0371	0.0740	-0.0368	1.1817	1.09
Tangent	379+62.690	385+22.970	0.1061	4.125	2.091	0.1587	0.1022	0.0564	0.0804	0.0258	0.0546	0.0783	0.0764	0.0018	1.4952	1.38
Simple Curve 7	385+22.970	405+75.410	0.3887	5.412	9.817	0.2082	0.0766	0.1316	0.3776	0.1212	0.2564	-0.1694	-0.0446	-0.1248	0.5355	0.49
Tangent	405+75.410	520+49.150	2.1731	48.824	50.368	1.8778	0.7321	1.1457	1.9372	0.6218	1.3154	-0.0594	0.1103	-0.1697	0.8641	0.74
Simple Curve 8	520+49.150	540+74.370	0.3836	11.955	30.871	0.4598	0.1810	0.2788	1.1874	0.3811	0.8062	-0.7276	-0.2001	-0.5275	1.1988	0.31
Tangent	540+74.370	580+10.000	0.7454	45.636	55.023	1.7552	0.7904	0.9648	2.1163	0.6793	1.4370	-0.3611	0.1111	-0.4722	2.3548	0.57

Table 9. Predicted Crash Frequencies by Year (Section 1)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2025	21.17	8.41	39.738	12.76	60.262
2026	22.73	9.04	39.783	13.69	60.217
2027	24.27	9.67	39.821	14.61	60.179
2028	25.80	10.28	39.854	15.52	60.146
2029	27.32	10.90	39.881	16.43	60.119
2030	27.93	11.14	39.889	16.79	60.111
2031	28.55	11.39	39.897	17.16	60.103
2032	29.17	11.64	39.905	17.53	60.095
2033	29.79	11.89	39.912	17.90	60.088
2034	30.41	12.14	39.920	18.27	60.080
2035	31.03	12.39	39.927	18.64	60.073
2036	31.65	12.64	39.934	19.01	60.066
2037	32.28	12.89	39.941	19.39	60.059
2038	32.91	13.14	39.948	19.76	60.052
2039	33.53	13.40	39.955	20.13	60.045
2040	34.17	13.65	39.962	20.51	60.038
2041	34.92	13.96	39.970	20.96	60.030
2042	35.69	14.27	39.978	21.42	60.022
2043	36.44	14.57	39.986	21.87	60.014
2044	37.21	14.88	39.994	22.33	60.006
2045	37.97	15.19	40.002	22.78	59.998
2046	38.74	15.50	40.010	23.24	59.990
2047	39.51	15.81	40.017	23.70	59.983
2048	40.29	16.12	40.024	24.16	59.976
2049	41.06	16.43	40.031	24.62	59.969
2050	41.83	16.75	40.038	25.08	59.962
Total	846.38	338.11	39.948	508.27	60.052
Average	32.55	13.00	39.948	19.55	60.052

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 10. Expected Crash Frequencies by Year (Section 1)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2025	10.57	4.42	41.795	6.15	58.186
2026	11.35	4.75	41.844	6.60	58.142
2027	12.12	5.08	41.884	7.04	58.105
2028	12.88	5.40	41.917	7.48	58.074
2029	13.64	5.72	41.947	7.92	58.048
2030	13.95	5.85	41.955	8.10	58.040
2031	14.26	5.98	41.963	8.27	58.032
2032	14.56	6.11	41.971	8.45	58.025
2033	14.87	6.24	41.979	8.63	58.018
2034	15.18	6.38	41.987	8.81	58.011
2035	15.49	6.51	41.995	8.99	58.003
2036	15.80	6.64	42.002	9.17	57.997
2037	16.12	6.77	42.009	9.35	57.990
2038	16.43	6.90	42.017	9.53	57.983
2039	16.74	7.04	42.024	9.71	57.977
2040	17.06	7.17	42.031	9.89	57.970
2041	17.44	7.33	42.040	10.11	57.962
2042	17.82	7.49	42.049	10.33	57.954
2043	18.20	7.65	42.057	10.54	57.946
2044	18.58	7.82	42.066	10.77	57.938
2045	18.96	7.98	42.073	10.98	57.931
2046	19.35	8.14	42.081	11.21	57.924
2047	19.73	8.30	42.089	11.43	57.917
2048	20.12	8.47	42.097	11.65	57.910
2049	20.50	8.63	42.104	11.87	57.903
2050	20.89	8.80	42.112	12.09	57.896
Total	422.63	177.58	42.017	245.06	57.983
Average	16.25	6.83	42.017	9.43	57.983

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 11. Comparing Predicted and Expected Crashes for the Evaluation Period (Section 1)

Scope	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
Predicted	846.38	338.11	39.948	508.27	60.052
Expected	422.63	177.58	42.017	245.06	57.983
Expected - Predicted	-423.75	-160.53		-263.21	
Percent Difference	-100.26	-90.40		-107.41	

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 12. Expected Crash Type Distribution (Section 1)

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	2.82	0.7	21.39	5.1	23.04	5.5
Highway Segment	Collision with Bicycle	0.30	0.1	0.12	0.0	0.38	0.1
Highway Segment	Other Single-vehicle Collision	0.52	0.1	3.37	0.8	4.00	0.9
Highway Segment	Overturned	2.75	0.7	1.74	0.4	4.76	1.1
Highway Segment	Collision with Pedestrian	0.52	0.1	0.12	0.0	0.57	0.1
Highway Segment	Run Off Road	40.43	9.6	58.70	13.9	99.20	23.5
Highway Segment	Total Single Vehicle Crashes	47.33	11.2	85.43	20.2	131.96	31.2
Highway Segment	Angle Collision	7.49	1.8	8.37	2.0	16.18	3.8
Highway Segment	Head-on Collision	2.52	0.6	0.35	0.1	3.05	0.7
Highway Segment	Other Multiple-vehicle Collision	1.93	0.5	3.49	0.8	5.14	1.2
Highway Segment	Rear-end Collision	12.24	2.9	14.18	3.4	27.04	6.4
Highway Segment	Sideswipe	2.82	0.7	4.42	1.0	7.04	1.7
Highway Segment	Total Multiple Vehicle Crashes	27.00	6.4	30.80	7.3	58.46	13.8
Highway Segment	Total Highway Segment Crashes	74.33	17.6	116.23	27.5	190.41	45.1
Intersection	Collision with Animal	0.64	0.2	1.95	0.5	2.53	0.6
Intersection	Collision with Bicycle	0.10	0.0	0.13	0.0	0.23	0.1
Intersection	Other Single-vehicle Collision	0.49	0.1	1.41	0.3	1.86	0.4
Intersection	Overturned	0.79	0.2	0.55	0.1	1.35	0.3
Intersection	Collision with Pedestrian	0.10	0.0	0.13	0.0	0.23	0.1
Intersection	Run Off Road	11.27	2.7	19.84	4.7	31.15	7.4
Intersection	Total Single Vehicle Crashes	13.39	3.2	24.02	5.7	37.35	8.8
Intersection	Angle Collision	52.29	12.4	43.80	10.4	95.60	22.6
Intersection	Head-on Collision	6.43	1.5	3.31	0.8	9.57	2.3
Intersection	Other Multiple-vehicle Collision	4.43	1.0	4.72	1.1	9.13	2.2
Intersection	Rear-end Collision	22.24	5.3	34.59	8.2	57.03	13.5
Intersection	Sideswipe	4.62	1.1	18.39	4.4	23.36	5.5
Intersection	Total Multiple Vehicle Crashes	90.01	21.3	104.80	24.8	194.69	46.1
Intersection	Total Intersection Crashes	103.40	24.5	128.82	30.5	232.04	54.9
	Total Crashes	177.72	42.1	245.06	58.0	422.45	100.0

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 13. Evaluation Message

Start Location (Sta. ft)	End Location (Sta. ft)	Message
580+00.000	580+00.000	Warning: for intersection #3 (580+00.000 to 580+00.000), SE SD-38 at 580+00.000 has more than one lane exiting. No intersection crash prediction computed.
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,560 vpd) for 2019 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,560 vpd) for 2020 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,560 vpd) for 2021 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,560 vpd) for 2022 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,640 vpd) for 2023 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
580+00.000	580+00.000	Warning: for intersection #3 (580+00.000 to 580+00.000), SE SD-38 at 580+00.000 has more than one lane exiting. No intersection crash prediction computed.
187+50.000	187+50.000	Warning: for intersection #5 (187+50.000 to 187+50.000), minor road traffic volume (3,503 vpd) for 2049 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
187+50.000	187+50.000	Warning: for intersection #5 (187+50.000 to 187+50.000), minor road traffic volume (3,570 vpd) for 2050 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,802 vpd) for 2025 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,882 vpd) for 2026 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,963 vpd) for 2027 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,044 vpd) for 2028 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,125 vpd) for 2029 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,221 vpd) for 2030 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,318 vpd) for 2031 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,415 vpd) for 2032 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,512 vpd) for 2033 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST

Start Location (Sta. ft)	End Location (Sta. ft)	Message
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,609 vpd) for 2034 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,705 vpd) for 2035 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,802 vpd) for 2036 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,899 vpd) for 2037 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,996 vpd) for 2038 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,093 vpd) for 2039 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,190 vpd) for 2040 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,308 vpd) for 2041 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,427 vpd) for 2042 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,545 vpd) for 2043 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,664 vpd) for 2044 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,782 vpd) for 2045 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,901 vpd) for 2046 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (6,019 vpd) for 2047 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (6,138 vpd) for 2048 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (6,256 vpd) for 2049 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (6,375 vpd) for 2050 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST

Interactive Highway Safety Design Model

Crash Prediction Evaluation Report

June 1, 2024

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Report Overview

Report Generated: Jun 1, 2024 2:26 PM
Report Template: System: Single Page, 508 Compliant [System] (mlcpm5, Dec 5, 2019 2:16 PM)

Evaluation Date: Sat Jun 01 14:21:35 CDT 2024
IHSDM Version: v17.0.0 (Sep 22, 2021)
Crash Prediction Module: v12.0.0 (Sep 22, 2021)

User Name: naveen.mallipaddi
Organization Name:
Phone:
E-Mail:

Project Title: SD-38_Build_Option1_I90EBRamp_I
Project Comment: Created Mon Mar 27 16:47:43 CDT 2023
Project Unit System: U.S. Customary

Highway Title: SD-38
Highway Comment: Created Mon Mar 27 16:49:47 CDT 2023
Highway Version: 22

Evaluation Title: Evaluation 55
Evaluation Comment: Created Sat Jun 01 14:16:24 CDT 2024

Minimum Location: 585+00.000
Maximum Location: 974+11.000

Policy for Superelevation: AASHTO 2011 U.S. Customary
Calibration: HSM Configuration
Crash Distribution: HSM Configuration
Model/CMF: HSM Configuration

First Year of Analysis: 2025
Last Year of Analysis: 2050
Empirical-Bayes Analysis: Site-Specific
Highway with Crash History: SD-38
Highway with Crash History Comment: Created Mon Mar 27 16:49:47 CDT 2023
Highway with Crash History Version: 22
First Year of Observed Crashes: 2018
Last Year of Observed Crashes: 2022

Disclaimer Regarding Crash Prediction Method

IMPORTANT NOTICE ABOUT COMPARING RESULTS FROM HIGHWAY SAFETY MANUAL FIRST EDITION (2010) MODELS TO RESULTS FROM NEW MODELS DEVELOPED UNDER NCHRP PROJECTS 17-70, 17-58, AND 17-68

Since the publication of the Highway Safety Manual - First Edition (HSM-1), in 2010 by the American Association of State Highway and Transportation Officials (AASHTO), multiple research efforts have been undertaken through the National Cooperative Highway Research Program (NCHRP) to develop safety performance models for road segment and intersection facility types that were not initially reflected in the HSM-1, in order to expand the breadth and depth of the HSM in the future.

The IHSDM Crash Prediction Module (CPM) is intended as a faithful implementation of HSM Part C predictive methods. As NCHRP projects to develop new predictive methods for the HSM are completed, FHWA works to incorporate the new methods into IHSDM, sometimes in advance of publication in the HSM. The following new crash predictive methods have been accepted by NCHRP project panels and incorporated into IHSDM, while pending AASHTO's approval for incorporation into a future edition of the HSM:

- Roundabouts: completed in 2018 under NCHRP Project 17-70, the new methods will provide improved outcomes for the safety analysis of roundabouts.
- 6+ lane and one-way urban/suburban arterials (including models for segments and intersections): completed under NCHRP Project 17-58.
- Intersection crash prediction methods for some intersection configurations and traffic control types not currently addressed in the HSM (e.g., all-way stop; rural 3-leg signalized; 3-leg stop-controlled where the major leg turns; urban 5-leg signalized; urban high-speed intersections): completed in 2021 under NCHRP Project 17-68.

However, in the absence of local calibration factors (see HSM-1 Part C, Appendix A for guidance on calibration of the predictive models), it is neither appropriate nor advisable to directly compare the results from new models (from NCHRP Projects 17-58, 17-68, and 17-70) to results from HSM-1 models, as the models were not calibrated to the same base state data sets, and consequently can produce unexpected results. If local calibration factors are available and applied to both new models and HSM-1 models, then it may be appropriate to directly compare the results.*[Note: Work being performed under NCHRP Project 17-72 (Update of Crash Modification Factors for the Highway Safety Manual) is expected to re-calibrate many of the old (HSM-1) and new (e.g., NCHRP 17-70) models to data from a single (or small number of) states, that would allow results from all models to be directly compared.]*

The models produced for NCHRP Project 17-70 have independent value in terms of informing the design of a roundabout and assessing the effects of different design characteristics on the expected safety performance of a roundabout.

The HSM-1 interim method previously included in IHSDM for evaluating roundabouts on urban/suburban arterials (i.e., evaluating an existing intersection and then applying a Crash Modification Factor for replacing the existing intersection with a roundabout) has been deactivated in IHSDM, to minimize any confusion with the new roundabout methodology.

Section Types

Section 4 Evaluation

Section: Section 4
Evaluation Start Location: 676+00.000
Evaluation End Location: 862+60.000
Area Type: Rural
Functional Class: Arterial
Type of Alignment: Undivided, Two Lane
Model Category: Rural, Two Lane
Calibration Factor: 2U=1.0; 3ST=1.0; 4ST=1.0; RT_ST_FI=1.0; RT_ST_PDO=1.0;

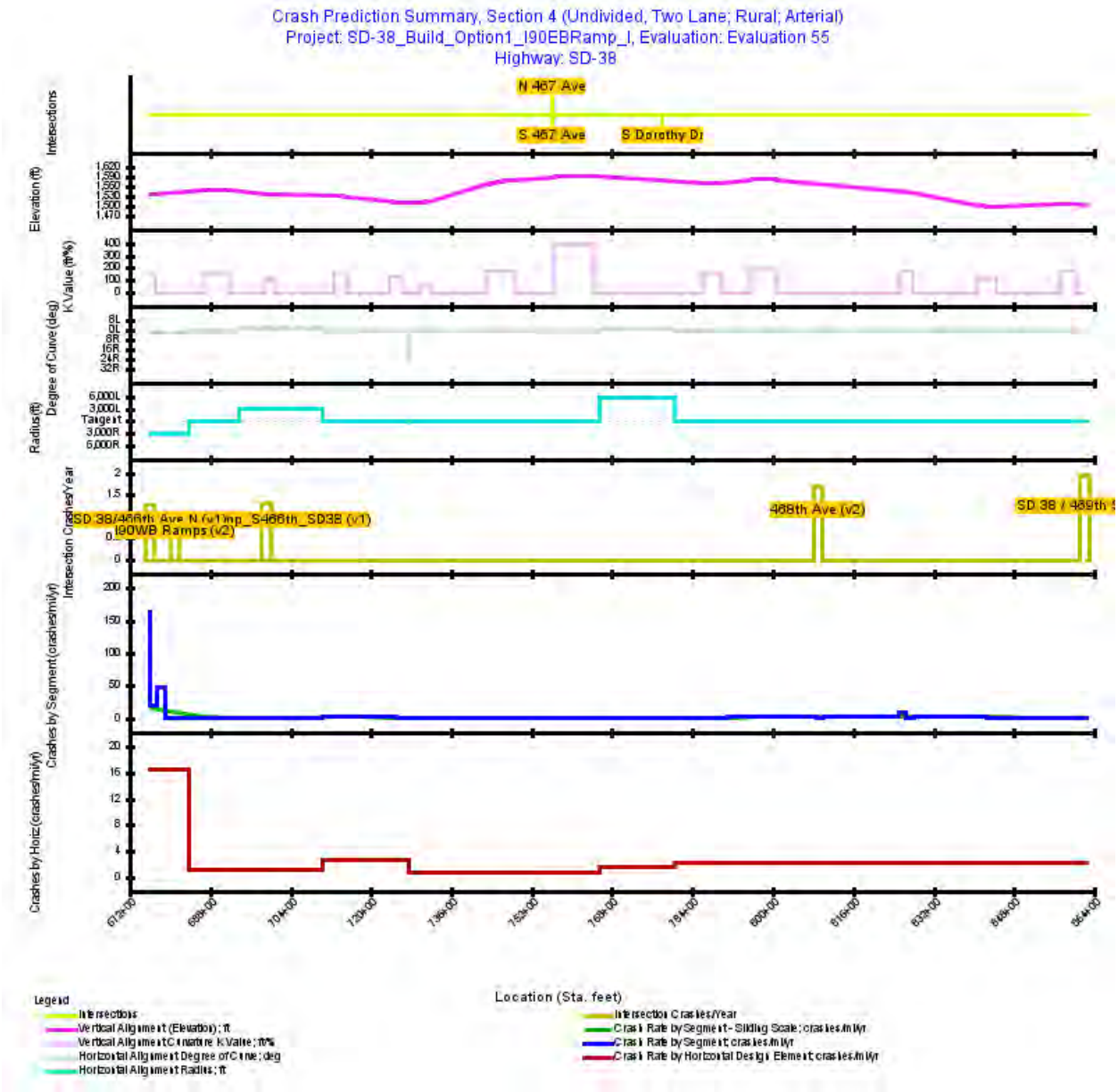

Figure 1. Crash Prediction Summary (Section 4)

Table 1. Observed Crashes Used in the Evaluation (Section 4)

Year	Observed Crashes	Total Crashes Used	FI Crashes	FI no/C Crashes	PDO Crashes
2018	6	6	5	5	1
2019	7	7	3	0	4
2020	3	3	1	0	2
2021	4	4	2	1	2
2022	7	7	4	0	3
All Years	27 [1]	27	15	6	12

Footnotes

[1] Note: Observed crash data that does not comply with the associated CPM model requirements may not be used in EB processing.

Table 2. Evaluation Highway - Homogeneous Segments (Section 4)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
22	Rural Two-Lane Segment Two-lane Undivided	676+00.000	676+15.090	15.09	0.0029	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	0.00	8.00	2.61	4.0	3	false	0	false	false	false	3,101.89	2.0	true	70
23	Rural Two-Lane Segment Two-lane Undivided	676+15.090	677+50.000	134.91	0.0256	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	0.00	8.00	1.34	4.0	3	false	0	false	false	false	3,101.89	2.0	true	70
24	Rural Two-Lane Segment Two-lane Undivided	677+50.000	679+00.000	150.00	0.0284	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	1.34	4.0	3	false	0	false	false	false	3,101.89	2.0	true	70
25	Rural Two-Lane Segment Two-lane Undivided	679+00.000	680+80.000	180.00	0.0341	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	8.00	1.34	4.0	3	false	0	false	false	false	3,101.89	2.0	true	70
26	Rural Two-Lane Segment Two-lane Undivided	680+80.000	680+90.000	10.00	0.0019	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	0.00	8.00	1.34	4.0	3	false	0	false	false	false	3,101.89	2.0	true	70
27	Rural Two-Lane Segment Two-lane Undivided	680+90.000	682+20.000	130.00	0.0246	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	0.00	8.00	1.34	4.0	3	false	0	false	false	false	3,101.89	2.0	true	70
28	Rural Two-Lane Segment Two-lane Undivided	682+20.000	682+30.000	10.00	0.0019	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	8.00	1.34	4.0	3	false	0	false	false	false	3,101.89	2.0	true	70
29	Rural Two-Lane Segment Two-lane Undivided	682+30.000	683+82.710	152.71	0.0289	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	8.00	1.34	4.0	3	false	0	false	false	false	3,101.89	2.0	true	70
30	Rural Two-Lane Segment Two-lane Undivided	683+82.710	689+36.990	554.28	0.1050	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	8.00	1.34	4.0	3	false	0	false	false	false				
31	Rural Two-Lane Segment Two-lane Undivided	689+36.990	691+50.000	213.01	0.0403	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	8.00	-1.67	4.0	3	false	0	false	false	false				
32	Rural Two-Lane Segment Two-lane Undivided	691+50.000	692+70.000	120.00	0.0227	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	8.00	-1.67	4.0	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
33	Rural Two-Lane Segment Two-lane Undivided	692+70.000	693+85.010	115.01	0.0218	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	8.00	-1.67	4.0	3	false	0	false	false	false				
34	Rural Two-Lane Segment Two-lane Undivided	693+85.010	698+70.000	484.99	0.0919	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	8.00	-1.67	4.0	3	false	0	false	false	false	3,038.64	2.0	true	70
35	Rural Two-Lane Segment Two-lane Undivided	698+70.000	699+00.000	30.00	0.0057	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	0.00	8.00	-1.67	4.0	3	false	0	false	false	false	3,038.64	2.0	true	70
36	Rural Two-Lane Segment Two-lane Undivided	699+00.000	699+20.000	20.00	0.0038	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	0.00	0.00	-1.67	4.0	3	false	0	false	false	false	3,038.64	2.0	true	70
37	Rural Two-Lane Segment Two-lane Undivided	699+20.000	699+73.960	53.96	0.0102	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	0.00	0.00	-1.67	4.0	3	false	0	false	false	false	3,038.64	2.0	true	70
38	Rural Two-Lane Segment Two-lane Undivided	699+73.960	700+50.000	76.04	0.0144	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	0.00	0.00	-0.29	4.0	3	false	0	false	false	false	3,038.64	2.0	true	70
39	Rural Two-Lane Segment Two-lane Undivided	700+50.000	702+00.000	150.00	0.0284	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	0.00	-0.29	4.0	3	false	0	false	false	false	3,038.64	2.0	true	70
40	Rural Two-Lane Segment Two-lane Undivided	702+00.000	702+50.000	50.00	0.0095	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	0.00	-0.29	4.0	3	false	0	false	false	false	3,038.64	2.0	true	70
41	Rural Two-Lane Segment Two-lane Undivided	702+50.000	710+47.850	797.85	0.1511	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	-0.29	4.0	3	false	0	false	false	false	3,038.64	2.0	true	70
42	Rural Two-Lane Segment Two-lane Undivided	710+47.850	713+88.360	340.51	0.0645	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	-0.29	4.0	3	false	0	false	false	false				
43	Rural Two-Lane Segment Two-lane Undivided	713+88.360	725+01.220	1,112.86	0.2108	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	-1.80	4.0	3	false	0	false	false	false				
44	Rural Two-Lane Segment Two-lane Undivided	725+01.220	727+00.000	198.78	0.0376	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	0.06	4.0	3	false	0	false	false	false				
45	Rural Two-Lane Segment Two-lane Undivided	727+00.000	727+52.350	52.35	0.0099	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	0.06	4.0	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
46	Rural Two-Lane Segment Two-lane Undivided	727+52.350	730+90.510	338.16	0.0640	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	0.06	4.0	3	false	0	false	false	false				
47	Rural Two-Lane Segment Two-lane Undivided	730+90.510	735+00.000	409.49	0.0776	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	4.47	4.0	3	false	0	false	false	false				
48	Rural Two-Lane Segment Two-lane Undivided	735+00.000	739+00.000	400.00	0.0758	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	4.47	4.0	3	false	0	false	false	false				
49	Rural Two-Lane Segment Two-lane Undivided	739+00.000	744+50.000	550.00	0.1042	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	4.47	4.0	3	false	0	false	false	false				
50	Rural Two-Lane Segment Two-lane Undivided	744+50.000	745+69.220	119.22	0.0226	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	4.47	4.0	3	false	0	false	false	false				
51	Rural Two-Lane Segment Two-lane Undivided	745+69.220	751+00.000	530.78	0.1005	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	1.12	4.0	3	false	0	false	false	false				
52	Rural Two-Lane Segment Two-lane Undivided	751+00.000	760+50.000	950.00	0.1799	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	1.12	4.0	3	false	0	false	false	false				
53	Rural Two-Lane Segment Two-lane Undivided	760+50.000	765+52.550	502.55	0.0952	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	-0.88	4.0	3	false	0	false	false	false				
54	Rural Two-Lane Segment Two-lane Undivided	765+52.550	767+00.000	147.45	0.0279	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	-0.88	4.0	3	false	0	false	false	false	5,888.09	2.0	true	70
55	Rural Two-Lane Segment Two-lane Undivided	767+00.000	780+45.930	1,345.93	0.2549	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	-0.88	4.0	3	false	0	false	false	false	5,888.09	2.0	true	70
56	Rural Two-Lane Segment Two-lane Undivided	780+45.930	787+93.440	747.51	0.1416	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	-0.88	4.0	3	false	0	false	false	false				
57	Rural Two-Lane Segment Two-lane Undivided	787+93.440	791+00.000	306.56	0.0581	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	1.46	4.0	3	false	0	false	false	false				
58	Rural Two-Lane Segment Two-lane Undivided	791+00.000	791+10.000	10.00	0.0019	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	1.46	4.0	3	false	0	false	false	false				
59	Rural Two-Lane Segment Two-lane Undivided	791+10.000	798+12.000	702.00	0.1330	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	1.46	4.0	3	false	0	false	false	false				
60	Rural Two-Lane Segment Two-lane Undivided	798+12.000	808+80.000	1,068.00	0.2023	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	-1.46	4.0	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
61	Rural Two-Lane Segment Two-lane Undivided	808+80.000	809+00.000	20.00	0.0038	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	-1.46	4.0	3	false	0	false	false	false				
62	Rural Two-Lane Segment Two-lane Undivided	809+00.000	810+00.000	100.00	0.0189	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	0.00	0.00	-1.46	4.0	3	false	0	false	false	false				
63	Rural Two-Lane Segment Two-lane Undivided	810+00.000	825+00.000	1,500.00	0.2841	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	-1.46	4.0	3	false	0	false	false	false				
64	Rural Two-Lane Segment Two-lane Undivided	825+00.000	826+54.070	154.07	0.0292	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	-1.46	4.0	3	false	0	false	false	false				
65	Rural Two-Lane Segment Two-lane Undivided	826+54.070	828+00.000	145.93	0.0276	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	-2.84	4.0	3	false	0	false	false	false				
66	Rural Two-Lane Segment Two-lane Undivided	828+00.000	842+53.930	1,453.93	0.2754	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	-2.84	4.0	3	false	0	false	false	false				
67	Rural Two-Lane Segment Two-lane Undivided	842+53.930	854+00.000	1,146.07	0.2171	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	0.59	4.0	3	false	0	false	false	false				
68	Rural Two-Lane Segment Two-lane Undivided	854+00.000	854+70.000	70.00	0.0133	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	0.59	4.0	3	false	0	false	false	false				
69	Rural Two-Lane Segment Two-lane Undivided	854+70.000	855+80.000	110.00	0.0208	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	0.59	4.0	3	false	0	false	false	false				
70	Rural Two-Lane Segment Two-lane Undivided	855+80.000	858+75.120	295.12	0.0559	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	0.59	4.0	3	false	0	false	false	false				
71	Rural Two-Lane Segment Two-lane Undivided	858+75.120	861+85.000	309.88	0.0587	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	-1.07	4.0	3	false	0	false	false	false				
72	Rural Two-Lane Segment Two-lane Undivided	861+85.000	862+00.000	15.00	0.0028	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	0.00	-1.07	4.0	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
73	Rural Two-Lane Segment Two-lane Undivided	862+00.000	862+50.000	50.00	0.0095	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	0.00	-1.07	4.0	3	false	0	false	false	false				
74	Rural Two-Lane Segment Two-lane Undivided	862+50.000	862+60.000	10.00	0.0019	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	-1.07	4.0	3	false	0	false	false	false				

Table 3. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 4)

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
1	TWLTL	676+00.000	680+90.000	2025	2025	Total	0.6900

Table 4. Crash History Highway - Homogeneous Segments (Section 4)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
22	Rural Two-Lane Segment Two-lane Undivided	676+00.000	676+15.090	15.09	0.0029	2018-2022: 4,325	12.00	12.00	0.00	8.00	2.61	4.0	3	false	0	false	false	false	3,101.89	2.0	true	70
23	Rural Two-Lane Segment Two-lane Undivided	676+15.090	677+50.000	134.91	0.0256	2018-2022: 4,325	12.00	12.00	0.00	8.00	1.34	4.0	3	false	0	false	false	false	3,101.89	2.0	true	70
24	Rural Two-Lane Segment Two-lane Undivided	677+50.000	679+00.000	150.00	0.0284	2018-2022: 4,325	12.00	12.00	8.00	8.00	1.34	4.0	3	false	0	false	false	false	3,101.89	2.0	true	70
25	Rural Two-Lane Segment Two-lane Undivided	679+00.000	680+80.000	180.00	0.0341	2018-2022: 4,150	12.00	12.00	8.00	8.00	1.34	4.0	3	false	0	false	false	false	3,101.89	2.0	true	70
26	Rural Two-Lane Segment Two-lane Undivided	680+80.000	680+90.000	10.00	0.0019	2018-2022: 4,150	12.00	12.00	0.00	8.00	1.34	4.0	3	false	0	false	false	false	3,101.89	2.0	true	70
27	Rural Two-Lane Segment Two-lane Undivided	680+90.000	682+20.000	130.00	0.0246	2018-2022: 4,150	12.00	12.00	0.00	8.00	1.34	4.0	3	false	0	false	false	false	3,101.89	2.0	true	70
28	Rural Two-Lane Segment Two-lane Undivided	682+20.000	682+30.000	10.00	0.0019	2018-2022: 4,150	12.00	12.00	8.00	8.00	1.34	4.0	3	false	0	false	false	false	3,101.89	2.0	true	70
29	Rural Two-Lane Segment Two-lane Undivided	682+30.000	683+82.710	152.71	0.0289	2018-2022: 4,150	12.00	12.00	8.00	8.00	1.34	4.0	3	false	0	false	false	false	3,101.89	2.0	true	70
30	Rural Two-Lane Segment Two-lane Undivided	683+82.710	689+36.990	554.28	0.1050	2018-2022: 4,150	12.00	12.00	8.00	8.00	1.34	4.0	3	false	0	false	false	false				
31	Rural Two-Lane Segment Two-lane Undivided	689+36.990	691+50.000	213.01	0.0403	2018-2022: 4,150	12.00	12.00	8.00	8.00	-1.67	4.0	3	false	0	false	false	false				
32	Rural Two-Lane Segment Two-lane Undivided	691+50.000	692+70.000	120.00	0.0227	2018-2022: 4,150	12.00	12.00	8.00	8.00	-1.67	4.0	3	false	0	false	false	false				
33	Rural Two-Lane Segment Two-lane Undivided	692+70.000	693+85.010	115.01	0.0218	2018-2022: 4,150	12.00	12.00	8.00	8.00	-1.67	4.0	3	false	0	false	false	false				
34	Rural Two-Lane Segment Two-lane Undivided	693+85.010	698+70.000	484.99	0.0919	2018-2022: 4,150	12.00	12.00	8.00	8.00	-1.67	4.0	3	false	0	false	false	false	3,038.64	2.0	true	70
35	Rural Two-Lane Segment Two-lane Undivided	698+70.000	699+00.000	30.00	0.0057	2018-2022: 4,150	12.00	12.00	0.00	8.00	-1.67	4.0	3	false	0	false	false	false	3,038.64	2.0	true	70
36	Rural Two-Lane Segment Two-lane Undivided	699+00.000	699+20.000	20.00	0.0038	2018-2022: 4,150	12.00	12.00	0.00	0.00	-1.67	4.0	3	false	0	false	false	false	3,038.64	2.0	true	70
37	Rural Two-Lane Segment Two-lane Undivided	699+20.000	699+73.960	53.96	0.0102	2018-2022: 4,150	12.00	12.00	0.00	0.00	-1.67	4.0	3	false	0	false	false	false	3,038.64	2.0	true	70
38	Rural Two-Lane Segment Two-lane Undivided	699+73.960	700+50.000	76.04	0.0144	2018-2022: 4,150	12.00	12.00	0.00	0.00	-0.29	4.0	3	false	0	false	false	false	3,038.64	2.0	true	70
39	Rural Two-Lane Segment Two-lane Undivided	700+50.000	702+00.000	150.00	0.0284	2018-2022: 4,150	12.00	12.00	8.00	0.00	-0.29	4.0	3	false	0	false	false	false	3,038.64	2.0	true	70
40	Rural Two-Lane Segment Two-lane Undivided	702+00.000	702+50.000	50.00	0.0095	2018-2022: 4,900	12.00	12.00	8.00	0.00	-0.29	4.0	3	false	0	false	false	false	3,038.64	2.0	true	70
41	Rural Two-Lane Segment Two-lane Undivided	702+50.000	710+47.850	797.85	0.1511	2018-2022: 4,900	12.00	12.00	8.00	8.00	-0.29	4.0	3	false	0	false	false	false	3,038.64	2.0	true	70
42	Rural Two-Lane Segment Two-lane Undivided	710+47.850	713+88.360	340.51	0.0645	2018-2022: 4,900	12.00	12.00	8.00	8.00	-0.29	4.0	3	false	0	false	false	false				
43	Rural Two-Lane Segment Two-lane Undivided	713+88.360	725+01.220	1,112.86	0.2108	2018-2022: 4,900	12.00	12.00	8.00	8.00	-1.80	4.0	3	false	0	false	false	false				
44	Rural Two-Lane Segment Two-lane Undivided	725+01.220	727+00.000	198.78	0.0376	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.06	4.0	3	false	0	false	false	false				
45	Rural Two-Lane Segment Two-lane Undivided	727+00.000	727+52.350	52.35	0.0099	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.06	4.0	3	false	0	false	false	false				
46	Rural Two-Lane Segment Two-lane Undivided	727+52.350	730+90.510	338.16	0.0640	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.06	4.0	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
47	Rural Two-Lane Segment Two-lane Undivided	730+90.510	735+00.000	409.49	0.0776	2018-2022: 4,900	12.00	12.00	8.00	8.00	4.47	4.0	3	false	0	false	false	false				
48	Rural Two-Lane Segment Two-lane Undivided	735+00.000	739+00.000	400.00	0.0758	2018-2022: 4,900	12.00	12.00	8.00	8.00	4.47	4.0	3	false	0	false	false	false				
49	Rural Two-Lane Segment Two-lane Undivided	739+00.000	744+50.000	550.00	0.1042	2018-2022: 4,900	12.00	12.00	8.00	8.00	4.47	4.0	3	false	0	false	false	false				
50	Rural Two-Lane Segment Two-lane Undivided	744+50.000	745+69.220	119.22	0.0226	2018-2022: 4,900	12.00	12.00	8.00	8.00	4.47	4.0	3	false	0	false	false	false				
51	Rural Two-Lane Segment Two-lane Undivided	745+69.220	751+00.000	530.78	0.1005	2018-2022: 4,900	12.00	12.00	8.00	8.00	1.12	4.0	3	false	0	false	false	false				
52	Rural Two-Lane Segment Two-lane Undivided	751+00.000	760+50.000	950.00	0.1799	2018-2022: 4,900	12.00	12.00	8.00	8.00	1.12	4.0	3	false	0	false	false	false				
53	Rural Two-Lane Segment Two-lane Undivided	760+50.000	765+52.550	502.55	0.0952	2018-2022: 4,900	12.00	12.00	8.00	8.00	-0.88	4.0	3	false	0	false	false	false				
54	Rural Two-Lane Segment Two-lane Undivided	765+52.550	767+00.000	147.45	0.0279	2018-2022: 4,900	12.00	12.00	8.00	8.00	-0.88	4.0	3	false	0	false	false	false	5,888.09	2.0	true	70
55	Rural Two-Lane Segment Two-lane Undivided	767+00.000	780+45.930	1,345.93	0.2549	2018-2022: 4,900	12.00	12.00	8.00	8.00	-0.88	4.0	3	false	0	false	false	false	5,888.09	2.0	true	70
56	Rural Two-Lane Segment Two-lane Undivided	780+45.930	787+93.440	747.51	0.1416	2018-2022: 4,900	12.00	12.00	8.00	8.00	-0.88	4.0	3	false	0	false	false	false				
57	Rural Two-Lane Segment Two-lane Undivided	787+93.440	791+00.000	306.56	0.0581	2018-2022: 4,900	12.00	12.00	8.00	8.00	1.46	4.0	3	false	0	false	false	false				
58	Rural Two-Lane Segment Two-lane Undivided	791+00.000	791+10.000	10.00	0.0019	2018-2022: 4,900	12.00	12.00	8.00	8.00	1.46	4.0	3	false	0	false	false	false				
59	Rural Two-Lane Segment Two-lane Undivided	791+10.000	798+12.000	702.00	0.1330	2018-2022: 4,900	12.00	12.00	8.00	8.00	1.46	4.0	3	false	0	false	false	false				
60	Rural Two-Lane Segment Two-lane Undivided	798+12.000	808+80.000	1,068.00	0.2023	2018-2022: 4,900	12.00	12.00	8.00	8.00	-1.46	4.0	3	false	0	false	false	false				
61	Rural Two-Lane Segment Two-lane Undivided	808+80.000	809+00.000	20.00	0.0038	2018-2022: 4,900	12.00	12.00	8.00	8.00	-1.46	4.0	3	false	0	false	false	false				
62	Rural Two-Lane Segment Two-lane Undivided	809+00.000	810+00.000	100.00	0.0189	2018-2022: 4,900	12.00	12.00	0.00	0.00	-1.46	4.0	3	false	0	false	false	false				
63	Rural Two-Lane Segment Two-lane Undivided	810+00.000	825+00.000	1,500.00	0.2841	2018-2022: 4,900	12.00	12.00	8.00	8.00	-1.46	4.0	3	false	0	false	false	false				
64	Rural Two-Lane Segment Two-lane Undivided	825+00.000	826+54.070	154.07	0.0292	2018-2022: 4,900	12.00	12.00	8.00	8.00	-1.46	4.0	3	false	0	false	false	false				
65	Rural Two-Lane Segment Two-lane Undivided	826+54.070	828+00.000	145.93	0.0276	2018-2022: 4,900	12.00	12.00	8.00	8.00	-2.84	4.0	3	false	0	false	false	false				
66	Rural Two-Lane Segment Two-lane Undivided	828+00.000	842+53.930	1,453.93	0.2754	2018-2022: 4,900	12.00	12.00	8.00	8.00	-2.84	4.0	3	false	0	false	false	false				
67	Rural Two-Lane Segment Two-lane Undivided	842+53.930	854+00.000	1,146.07	0.2171	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.59	4.0	3	false	0	false	false	false				
68	Rural Two-Lane Segment Two-lane Undivided	854+00.000	854+70.000	70.00	0.0133	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.59	4.0	3	false	0	false	false	false				
69	Rural Two-Lane Segment Two-lane Undivided	854+70.000	855+80.000	110.00	0.0208	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.59	4.0	3	false	0	false	false	false				
70	Rural Two-Lane Segment Two-lane Undivided	855+80.000	858+75.120	295.12	0.0559	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.59	4.0	3	false	0	false	false	false				
71	Rural Two-Lane Segment Two-lane Undivided	858+75.120	861+85.000	309.88	0.0587	2018-2022: 4,900	12.00	12.00	8.00	8.00	-1.07	4.0	3	false	0	false	false	false				
72	Rural Two-Lane Segment Two-lane Undivided	861+85.000	862+00.000	15.00	0.0028	2018-2022: 4,900	12.00	12.00	8.00	0.00	-1.07	4.0	3	false	0	false	false	false				
73	Rural Two-Lane Segment Two-lane Undivided	862+00.000	862+50.000	50.00	0.0095	2018-2022: 4,900	12.00	12.00	8.00	0.00	-1.07	4.0	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
74	Rural Two-Lane Segment Two-lane Undivided	862+50.000	862+60.000	10.00	0.0019	2018-2022: 4,900	12.00	12.00	8.00	8.00	-1.07	4.0	3	false	0	false	false	false				

Table 5. Evaluation Intersection - Section 4

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
2	I90EBRamp_S466th_SD38 (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	699+20.000	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	2025: 630; 2026: 644; 2027: 657; 2028: 671; 2029: 685; 2030: 700; 2031: 716; 2032: 732; 2033: 748; 2034: 764; 2035: 780; 2036: 796; 2037: 812; 2038: 828; 2039: 844; 2040: 860; 2041: 1,166; 2042: 1,473; 2043: 1,779; 2044: 2,086; 2045: 2,392; 2046: 2,699; 2047: 3,005; 2048: 3,312; 2049: 3,618; 2050: 3,925	4	Stop-Controlled	1	0	4.64	4.27	false

Table 6. Evaluation Intersection - Section 4

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
5	468th Ave (v2)	Rural Two-Lane Intersection Four-Legged w/STOP control	809+00.000	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	2025: 667; 2026: 682; 2027: 696; 2028: 710; 2029: 725; 2030: 741; 2031: 758; 2032: 775; 2033: 792; 2034: 809; 2035: 825; 2036: 842; 2037: 859; 2038: 876; 2039: 893; 2040: 910; 2041: 1,052; 2042: 1,195; 2043: 1,337; 2044: 1,480; 2045: 1,622; 2046: 1,765; 2047: 1,907; 2048: 2,050; 2049: 2,192; 2050: 2,335	4	Stop-Controlled	0	0	0.00	0.00	false
6	SD 38 / 469th St (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	862+00.000	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	2025: 2,990; 2026: 3,054; 2027: 3,117; 2028: 3,181; 2029: 3,245; 2030: 3,321; 2031: 3,397; 2032: 3,474; 2033: 3,550; 2034: 3,626; 2035: 3,703; 2036: 3,779; 2037: 3,855; 2038: 3,932; 2039: 4,008; 2040: 4,085; 2041: 4,178; 2042: 4,271; 2043: 4,364; 2044: 4,457; 2045: 4,550; 2046: 4,643; 2047: 4,736; 2048: 4,829; 2049: 4,922; 2050: 5,015	4	Stop-Controlled	0	1	0.00	0.00	false

Table 7. Evaluation Intersection (Section 4)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
3	SD 38/466th Ave N (v1)	Rural Multi-Lane Intersection Three-Legged w/STOP control	676+00.000	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	2025: 118; 2026: 121; 2027: 124; 2028: 127; 2029: 130; 2030: 133; 2031: 136; 2032: 139; 2033: 142; 2034: 145; 2035: 149; 2036: 152; 2037: 155; 2038: 158; 2039: 161; 2040: 165; 2041: 168; 2042: 172; 2043: 175; 2044: 179; 2045: 182; 2046: 186; 2047: 189; 2048: 193; 2049: 196; 2050: 200	3	Stop-Controlled	0	0	8.65		false

Table 8. Evaluation Ramp Terminal - Site (Section 4)

Inter. No.	Title	Type	Area Type	Legs	Location (Sta. ft)	Traffic Control	AADT
4	I90WB Ramps (v2)	Freeway Ramp Terminal A2 - Three-Leg at Two-Quadrant Parclo A	Rural	4	681+00.000	Stop-Controlled	Inside: 2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170; Outside: 2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170 :: Entrance: 2025: 856; 2026: 875; 2027: 893; 2028: 911; 2029: 930; 2030: 951; 2031: 973; 2032: 995; 2033: 1,017; 2034: 1,039; 2035: 1,060; 2036: 1,082; 2037: 1,104; 2038: 1,126; 2039: 1,148; 2040: 1,170; 2041: 1,339; 2042: 1,508; 2043: 1,677; 2044: 1,846; 2045: 2,015; 2046: 2,184; 2047: 2,353; 2048: 2,522; 2049: 2,691; 2050: 2,860

Table 9. Crash History Intersection - Section 4

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
2	I90EBRamp_S466th_SD38 (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	699+20.000	2018-2022: 4,150	2018-2022: 590	4	Stop-Controlled	1	0	4.64	4.27	false

Table 10. Crash History Intersection - Section 4

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
5	468th Ave (v2)	Rural Two-Lane Intersection Four-Legged w/STOP control	809+00.000	2018-2022: 4,900	2018-2022: 625	4	Stop-Controlled	0	0	0.00	0.00	false
6	SD 38 / 469th St (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	862+00.000	2018-2022: 4,900	2018-2022: 2,800	4	Stop-Controlled	0	1	0.00	0.00	false

Table 11. Crash History Intersection (Section 4)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
3	SD 38/466th Ave N (v1)	Rural Multi-Lane Intersection Three-Legged w/STOP control	676+00.000	2018-2022: 4,325	2018-2022: 110	3	Stop-Controlled	0	0	8.65		false

Table 12. Crash Highway Ramp Terminal - Site (Highway with Crash History)

Inter. No.	Title	Type	Area Type	Legs	Location (Sta. ft)	Traffic Control	AADT
4	I90WB Ramps (v2)	Freeway Ramp Terminal A2 - Three-Leg at Two-Quadrant Parclo A	Rural	4	681+00.000	Stop-Controlled	Inside: 2018-2022: 4,150; Outside: 2018-2022: 4,150 :: Entrance: 2018-2022: 802

Table 13. Expected Highway Crash Rates and Frequencies Summary (Section 4)

First Year of Analysis	**2025**
Last Year of Analysis	**2050**
Evaluated Length (mi)	**3.5341**
Average Future Road AADT (vpd)	**8,719**
Expected Crashes	
Total Crashes	**395.38**
Fatal and Injury Crashes	**180.11**
Fatal and Serious Injury Crashes	**9.32**
Property-Damage-Only Crashes	**215.27**
Percent of Total Expected Crashes	
Percent Fatal and Injury Crashes (%)	**46**
Percent Fatal and Serious Injury Crashes (%)	**2**
Percent Property-Damage-Only Crashes (%)	**54**
Expected Crash Rate	
Crash Rate (crashes/mi/yr)	**4.3029**
FI Crash Rate (crashes/mi/yr)	**1.9602**
FI no/C Crash Rate (crashes/mi/yr)	**0.1015**
PDO Crash Rate (crashes/mi/yr)	**2.3428**
Expected Travel Crash Rate	
Total Travel (million veh-mi)	**292.42**
Travel Crash Rate (crashes/million veh-mi)	**1.35**
Travel FI Crash Rate (crashes/million veh-mi)	**0.62**
Travel FI no/C Crash Rate (crashes/million veh-mi)	**0.03**
Travel PDO Crash Rate (crashes/million veh-mi)	**0.74**

Table 14. Expected Crash Frequencies and Rates by Highway Segment/Intersection (Section 4)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected FI no/C Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted FI no/C Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) FI no/C Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
SD 38/466th Ave N (v1)	676+00.000			32.818	37.742	1.2622	0.4932	0.3585	0.7690	1.4516	0.6469	0.4102	0.8047	-0.1894	-0.1537	-0.0517	-0.0357			0.23
22	676+00.000	676+15.090	0.0029	12.143	0.440	0.4670	0.4590		0.0081	0.0169	0.0054		0.0115	0.4501	0.4535		-0.0034	163.4115	29.87	
23	676+15.090	677+50.000	0.0256	13.296	3.936	0.5114	0.4472		0.0642	0.1514	0.0486		0.1028	0.3600	0.3986		-0.0386	20.0145	3.66	
24	677+50.000	679+00.000	0.0284	35.169	3.661	1.3526	0.3493		1.0034	0.1408	0.0452		0.0956	1.2118	0.3041		0.9078	47.6127	8.70	
25	679+00.000	680+80.000	0.0341	1.083	2.846	0.0416	0.0165		0.0252	0.1095	0.0351		0.0743	-0.0678	-0.0187		-0.0492	1.2212	0.34	
26	680+80.000	680+90.000	0.0019	0.064	0.189	0.0025	0.0010		0.0015	0.0073	0.0023		0.0049	-0.0048	-0.0013		-0.0035	1.3022	0.37	
27	680+90.000	682+20.000	0.0246	0.840	2.475	0.0323	0.0130		0.0193	0.0952	0.0306		0.0646	-0.0629	-0.0175		-0.0454	1.3113	0.37	
I90WB Ramps (v2)	681+00.000			20.354	15.321	0.7828	0.4306		0.3522	0.5893	0.2002		0.3891	0.1936	0.2305		-0.0369			0.21
28	682+20.000	682+30.000	0.0019	0.061	0.159	0.0023	0.0009		0.0014	0.0061	0.0020		0.0042	-0.0038	-0.0010		-0.0028	1.2298	0.35	
29	682+30.000	683+82.710	0.0289	0.925	2.432	0.0356	0.0141		0.0215	0.0935	0.0300		0.0635	-0.0580	-0.0160		-0.0420	1.2298	0.35	
30	683+82.710	689+36.990	0.1050	2.966	6.558	0.1141	0.0437		0.0704	0.2522	0.0810		0.1713	-0.1381	-0.0373		-0.1008	1.0868	0.31	
31	689+36.990	691+50.000	0.0403	1.140	2.520	0.0438	0.0168		0.0271	0.0969	0.0311		0.0658	-0.0531	-0.0143		-0.0388	1.0868	0.31	
32	691+50.000	692+70.000	0.0227	0.642	1.420	0.0247	0.0095		0.0152	0.0546	0.0175		0.0371	-0.0299	-0.0081		-0.0218	1.0868	0.31	
33	692+70.000	693+85.010	0.0218	0.616	1.361	0.0237	0.0091		0.0146	0.0523	0.0168		0.0355	-0.0287	-0.0077		-0.0209	1.0868	0.31	
34	693+85.010	698+70.000	0.0919	2.910	7.536	0.1119	0.0441		0.0678	0.2899	0.0930		0.1968	-0.1779	-0.0489		-0.1290	1.2183	0.34	
35	698+70.000	699+00.000	0.0057	0.192	0.557	0.0074	0.0030		0.0044	0.0214	0.0069		0.0146	-0.0140	-0.0039		-0.0101	1.3004	0.37	
36	699+00.000	699+20.000	0.0038	0.135	0.432	0.0052	0.0021		0.0031	0.0166	0.0053		0.0113	-0.0114	-0.0032		-0.0082	1.3665	0.39	
I90EBRamp_S466th_SD38 (v1)	699+20.000			33.839	75.514	1.3015	0.5948		0.7067	2.9044	1.2518		1.6526	-1.6029	-0.6570		-0.9459			0.32
37	699+20.000	699+73.960	0.0102	0.363	1.166	0.0140	0.0057		0.0083	0.0449	0.0144		0.0305	-0.0309	-0.0087		-0.0222	1.3665	0.39	
38	699+73.960	700+50.000	0.0144	0.512	1.643	0.0197	0.0080		0.0116	0.0632	0.0203		0.0429	-0.0435	-0.0122		-0.0313	1.3665	0.39	
39	700+50.000	702+00.000	0.0284	0.961	2.786	0.0369	0.0149		0.0221	0.1072	0.0344		0.0728	-0.0702	-0.0195		-0.0507	1.3004	0.37	
40	702+00.000	702+50.000	0.0095	0.237	0.769	0.0091	0.0037		0.0054	0.0296	0.0095		0.0201	-0.0205	-0.0058		-0.0147	0.9631	0.33	
41	702+50.000	710+47.850	0.1511	3.569	10.270	0.1373	0.0551		0.0821	0.3950	0.1268		0.2682	-0.2577	-0.0717		-0.1860	0.9084	0.31	
42	710+47.850	713+88.360	0.0645	6.400	3.337	0.2462	0.0297		0.2165	0.1284	0.0412		0.0872	0.1178	-0.0115		0.1293	3.8170	1.30	
43	713+88.360	725+01.220	0.2108	14.542	10.906	0.5593	0.2180		0.3413	0.4195	0.1347		0.2848	0.1398	0.0833		0.0565	2.6537	0.90	
44	725+01.220	727+00.000	0.0376	0.802	1.948	0.0308	0.0120		0.0188	0.0749	0.0241		0.0509	-0.0441	-0.0120		-0.0321	0.8192	0.28	
45	727+00.000	727+52.350	0.0099	0.211	0.513	0.0081	0.0032		0.0050	0.0197	0.0063		0.0134	-0.0116	-0.0032		-0.0084	0.8192	0.28	
46	727+52.350	730+90.510	0.0640	1.364	3.314	0.0525	0.0204		0.0320	0.1275	0.0409		0.0865	-0.0750	-0.0205		-0.0545	0.8192	0.28	
47	730+90.510	735+00.000	0.0776	1.716	4.415	0.0660	0.0260		0.0400	0.1698	0.0545		0.1153	-0.1038	-0.0285		-0.0753	0.8510	0.29	
48	735+00.000	739+00.000	0.0758	1.676	4.312	0.0645	0.0254		0.0391	0.1659	0.0532		0.1126	-0.1014	-0.0278		-0.0735	0.8510	0.29	
49	739+00.000	744+50.000	0.1042	2.305	5.929	0.0886	0.0349		0.0537	0.2280	0.0732		0.1548	-0.1394	-0.0383		-0.1011	0.8510	0.29	
50	744+50.000	745+69.220	0.0226	0.500	1.285	0.0192	0.0076		0.0116	0.0494	0.0159		0.0336	-0.0302	-0.0083		-0.0219	0.8510	0.29	
51	745+69.220	751+00.000	0.1005	2.141	5.202	0.0824	0.0321		0.0503	0.2001	0.0642		0.1358	-0.1177	-0.0321		-0.0856	0.8192	0.28	
52	751+00.000	760+50.000	0.1799	3.832	9.310	0.1474	0.0574		0.0900	0.3581	0.1149		0.2431	-0.2107	-0.0575		-0.1532	0.8192	0.28	
53	760+50.000	765+52.550	0.0952	2.027	4.925	0.0780	0.0304		0.0476	0.1894	0.0608		0.1286	-0.1115	-0.0304		-0.0810	0.8192	0.28	
54	765+52.550	767+00.000	0.0279	0.639	1.740	0.0246	0.0098		0.0148	0.0669	0.0215		0.0454	-0.0423	-0.0117		-0.0306	0.8807	0.30	
55	767+00.000	780+45.930	0.2549	11.241	15.885	0.4323	0.1104		0.3219	0.6110	0.1961		0.4149	-0.1786	-0.0857		-0.0929	1.6960	0.58	
56	780+45.930	787+93.440	0.1416	3.015	7.326	0.1160	0.0452		0.0708	0.2818	0.0904		0.1913	-0.1658	-0.0452		-0.1205	0.8192	0.28	
57	787+93.440	791+00.000	0.0581	1.237	3.004	0.0476	0.0185		0.0290	0.1156	0.0371		0.0785	-0.0680	-0.0186		-0.0494	0.8192	0.28	

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected FI no/C Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted FI no/C Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) FI no/C Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
58	791+00.000	791+10.000	0.0019	0.040	0.098	0.0016	0.0006		0.0009	0.0038	0.0012		0.0026	-0.0022	-0.0006		-0.0016	0.8192	0.28	
59	791+10.000	798+12.000	0.1330	7.858	6.880	0.3022	0.0565		0.2457	0.2646	0.0849		0.1797	0.0376	-0.0284		0.0660	2.2733	0.77	
60	798+12.000	808+80.000	0.2023	14.361	10.467	0.5524	0.3758		0.1765	0.4026	0.1292		0.2733	0.1498	0.2466		-0.0968	2.7308	0.93	
61	808+80.000	809+00.000	0.0038	0.081	0.196	0.0031	0.0012		0.0019	0.0075	0.0024		0.0051	-0.0044	-0.0012		-0.0032	0.8192	0.28	
468th Ave (v2)	809+00.000			44.287	87.103	1.7033	0.9573		0.7460	3.3501	1.4439		1.9062	-1.6468	-0.4866		-1.1602			0.50
62	809+00.000	810+00.000	0.0189	0.525	1.568	0.0202	0.0082		0.0120	0.0603	0.0194		0.0409	-0.0401	-0.0112		-0.0289	1.0655	0.32	
63	810+00.000	825+00.000	0.2841	18.524	16.910	0.7125	0.2777		0.4348	0.6504	0.2088		0.4416	0.0621	0.0689		-0.0068	2.5079	0.74	
64	825+00.000	826+54.070	0.0292	6.497	1.737	0.2499	0.0164		0.2335	0.0668	0.0214		0.0454	0.1831	-0.0050		0.1881	8.5634	2.53	
65	826+54.070	828+00.000	0.0276	0.677	1.645	0.0260	0.0101		0.0159	0.0633	0.0203		0.0430	-0.0372	-0.0102		-0.0271	0.9423	0.28	
66	828+00.000	842+53.930	0.2754	18.310	16.391	0.7042	0.2745		0.4298	0.6304	0.2024		0.4280	0.0738	0.0721		0.0017	2.5575	0.76	
67	842+53.930	854+00.000	0.2171	11.100	12.920	0.4269	0.2439		0.1830	0.4969	0.1595		0.3374	-0.0700	0.0844		-0.1544	1.9668	0.58	
68	854+00.000	854+70.000	0.0133	0.325	0.789	0.0125	0.0049		0.0076	0.0304	0.0097		0.0206	-0.0179	-0.0049		-0.0130	0.9423	0.28	
69	854+70.000	855+80.000	0.0208	0.510	1.240	0.0196	0.0077		0.0120	0.0477	0.0153		0.0324	-0.0281	-0.0077		-0.0204	0.9423	0.28	
70	855+80.000	858+75.120	0.0559	1.369	3.327	0.0527	0.0205		0.0321	0.1280	0.0411		0.0869	-0.0753	-0.0205		-0.0547	0.9423	0.28	
71	858+75.120	861+85.000	0.0587	1.438	3.493	0.0553	0.0216		0.0338	0.1344	0.0431		0.0912	-0.0791	-0.0216		-0.0575	0.9423	0.28	
72	861+85.000	862+00.000	0.0028	0.075	0.202	0.0029	0.0011		0.0017	0.0078	0.0025		0.0053	-0.0049	-0.0014		-0.0035	1.0103	0.30	
SD 38 / 469th St (v1)	862+00.000			50.584	174.380	1.9455	0.9282		1.0173	6.7069	2.8907		3.8162	-4.7614	-1.9625		-2.7989			0.38
73	862+00.000	862+50.000	0.0095	0.285	0.772	0.0110	0.0044		0.0066	0.0297	0.0095		0.0202	-0.0187	-0.0052		-0.0136	1.1576	0.30	
74	862+50.000	862+60.000	0.0019	0.053	0.129	0.0020	0.0008		0.0012	0.0050	0.0016		0.0034	-0.0029	-0.0008		-0.0021	1.0797	0.28	
All Segments			3.5341	213.499	215.276	8.2115	3.5234		4.6881	8.2798	2.6578		5.6220	-0.0683	0.8655		-0.9339	2.3235	0.73	
All Intersections				181.881	390.059	6.9954	3.4041		3.5914	15.0023	6.4334		8.5689	-8.0069	-3.0294		-4.9775			0.32
Total			3.5341	395.380	605.335	15.2069	6.9274		8.2795	23.2821	9.0912		14.1909	-8.0752	-2.1638		-5.9114	4.3029		

Table 15. Expected Crash Frequencies and Rates by Horizontal Design Element (Section 4)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)
Simple Curve 1	676+00.000	683+82.710	0.1482	63.579	16.139	2.4453	1.3009	1.1444	0.6207	0.1993	0.4215	1.8246	1.1016	0.7230	16.4957	3.09
Tangent	683+82.710	693+85.010	0.1898	5.364	11.858	0.2063	0.0790	0.1273	0.4561	0.1464	0.3097	-0.2498	-0.0674	-0.1824	1.0868	0.31
Simple Curve 2	693+85.010	710+47.850	0.3149	8.878	25.160	0.3414	0.1367	0.2048	0.9677	0.3106	0.6571	-0.6263	-0.1740	-0.4523	1.0842	0.33
Tangent	710+47.850	727+51.450	0.3227	21.952	16.696	0.8443	0.2628	0.5815	0.6422	0.2061	0.4360	0.2021	0.0566	0.1455	2.6168	0.89
Simple Curve 3	727+51.450	727+52.350	0.0002	0.004	0.009	0.0001	0.0001	0.0001	0.0003	0.0001	0.0002	-0.0002	-0.0001	-0.0001	0.8192	0.28
Tangent	727+52.350	765+52.550	0.7197	15.562	38.693	0.5985	0.2342	0.3643	1.4882	0.4777	1.0105	-0.8897	-0.2435	-0.6462	0.8316	0.28
Simple Curve 4	765+52.550	780+45.930	0.2828	11.880	17.626	0.4569	0.1202	0.3367	0.6779	0.2176	0.4603	-0.2210	-0.0974	-0.1236	1.6155	0.55
Tangent	780+45.930	862+60.000	1.5557	86.281	89.095	3.3185	1.3896	1.9290	3.4267	1.1000	2.3267	-0.1082	0.2896	-0.3978	2.1331	0.66

Table 16. Predicted Crash Frequencies by Year (Section 4)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2025	13.90	5.40	38.844	8.50	61.156
2026	14.96	5.80	38.801	9.15	61.199
2027	15.93	6.18	38.789	9.75	61.211
2028	16.91	6.56	38.776	10.35	61.224
2029	17.90	6.94	38.762	10.96	61.238
2030	18.35	7.11	38.771	11.23	61.229
2031	18.81	7.29	38.780	11.51	61.220
2032	19.27	7.47	38.790	11.79	61.210
2033	19.73	7.65	38.798	12.07	61.202
2034	20.19	7.83	38.806	12.35	61.194
2035	20.65	8.02	38.815	12.64	61.185
2036	21.12	8.20	38.823	12.92	61.177
2037	21.59	8.38	38.829	13.21	61.171
2038	22.06	8.57	38.836	13.49	61.164
2039	22.53	8.75	38.843	13.78	61.157
2040	23.00	8.94	38.850	14.07	61.150
2041	24.31	9.47	38.965	14.84	61.035
2042	25.58	9.99	39.062	15.59	60.938
2043	26.82	10.50	39.143	16.32	60.857
2044	28.06	11.00	39.215	17.05	60.785
2045	29.27	11.50	39.276	17.77	60.724
2046	30.48	11.99	39.331	18.49	60.669
2047	31.68	12.48	39.379	19.21	60.621
2048	32.88	12.96	39.422	19.92	60.578
2049	34.08	13.45	39.460	20.63	60.540
2050	35.28	13.93	39.495	21.34	60.505
Total	605.34	236.37	39.048	368.96	60.952
Average	23.28	9.09	39.048	14.19	60.952

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 17. Expected Crash Frequencies by Year (Section 4)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2025	9.08	4.12	45.316	4.96	54.628
2026	9.77	4.42	45.266	5.34	54.666
2027	10.41	4.71	45.252	5.69	54.677
2028	11.05	5.00	45.237	6.04	54.689
2029	11.69	5.29	45.220	6.39	54.701
2030	11.98	5.42	45.231	6.55	54.693
2031	12.28	5.56	45.242	6.72	54.685
2032	12.58	5.69	45.253	6.88	54.676
2033	12.88	5.83	45.263	7.04	54.669
2034	13.19	5.97	45.272	7.21	54.662
2035	13.49	6.11	45.282	7.37	54.654
2036	13.79	6.25	45.291	7.54	54.647
2037	14.10	6.39	45.299	7.70	54.641
2038	14.41	6.53	45.307	7.87	54.635
2039	14.71	6.67	45.315	8.04	54.629
2040	15.03	6.81	45.323	8.21	54.623
2041	15.88	7.22	45.457	8.66	54.520
2042	16.71	7.61	45.570	9.10	54.433
2043	17.52	8.00	45.665	9.52	54.361
2044	18.32	8.38	45.749	9.95	54.297
2045	19.12	8.76	45.820	10.37	54.242
2046	19.91	9.14	45.885	10.79	54.193
2047	20.70	9.51	45.940	11.21	54.150
2048	21.48	9.88	45.991	11.62	54.111
2049	22.26	10.25	46.035	12.04	54.078
2050	23.04	10.62	46.076	12.45	54.047
Total	395.38	180.11	45.554	215.27	54.446
Average	15.21	6.93	45.554	8.28	54.446

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 18. Comparing Predicted and Expected Crashes for the Evaluation Period (Section 4)

Scope	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
Predicted	605.34	236.37	39.048	368.96	60.952
Expected	395.38	180.11	45.554	215.27	54.446
Expected - Predicted	-209.96	-56.26		-153.70	
Percent Difference	-53.10	-31.24		-71.40	

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 19. Expected Crash Severity by Ramp Terminal or Roundabout (Section 4)

Seg. No.	Type	Fatal (K) Crashes (crashes)	Incapacitating Injury (A) Crashes (crashes)	Non-Incapacitating Injury (B) Crashes (crashes)	Possible Injury (C) Crashes (crashes)	No Injury (O) Crashes (crashes)
4	FRERampTerminal	0.1324	0.6953	2.3001	8.0684	9.1576

Table 20. Expected Crash Type Distribution (Section 4)

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	3.48	0.9	22.43	5.7	25.83	6.5
Highway Segment	Collision with Bicycle	0.37	0.1	0.12	0.0	0.43	0.1
Highway Segment	Other Single-vehicle Collision	0.64	0.2	3.54	0.9	4.48	1.1
Highway Segment	Overturned	3.39	0.9	1.83	0.5	5.34	1.4
Highway Segment	Collision with Pedestrian	0.64	0.2	0.12	0.0	0.64	0.2
Highway Segment	Run Off Road	49.93	12.6	61.55	15.6	111.23	28.1
Highway Segment	Total Single Vehicle Crashes	58.45	14.8	89.59	22.7	147.96	37.4
Highway Segment	Angle Collision	9.25	2.3	8.78	2.2	18.15	4.6
Highway Segment	Head-on Collision	3.12	0.8	0.37	0.1	3.42	0.9
Highway Segment	Other Multiple-vehicle Collision	2.38	0.6	3.66	0.9	5.76	1.5
Highway Segment	Rear-end Collision	15.12	3.8	14.87	3.8	30.32	7.7
Highway Segment	Sideswipe	3.48	0.9	4.63	1.2	7.90	2.0
Highway Segment	Total Multiple Vehicle Crashes	33.34	8.4	32.30	8.2	65.54	16.6
Highway Segment	Total Highway Segment Crashes	91.79	23.2	121.89	30.8	213.50	54.0
Intersection	Collision with Animal	0.39	0.1	0.90	0.2	1.29	0.3
Intersection	Collision with Bicycle	0.06	0.0	0.06	0.0	0.13	0.0
Intersection	Other Single-vehicle Collision	0.26	0.1	0.64	0.2	1.03	0.3
Intersection	Overturned	0.39	0.1	0.26	0.1	0.64	0.2
Intersection	Collision with Pedestrian	0.06	0.0	0.06	0.0	0.13	0.0
Intersection	Run Off Road	6.06	1.5	9.25	2.3	15.70	4.0
Intersection	Single	2.81	0.7	4.88	1.2	7.68	1.9
Intersection	Total Single Vehicle Crashes	10.03	2.5	16.05	4.1	26.60	6.7
Intersection	Angle Collision	39.04	9.9	26.69	6.8	64.11	16.2
Intersection	Head-on Collision	4.42	1.1	2.00	0.5	6.10	1.5
Intersection	Other Multiple-vehicle Collision	2.71	0.7	2.38	0.6	5.02	1.3
Intersection	Rear-end Collision	16.71	4.2	23.38	5.9	40.63	10.3
Intersection	Sideswipe	3.58	0.9	12.63	3.2	17.36	4.4
Intersection	Total Multiple Vehicle Crashes	66.46	16.8	67.08	17.0	133.22	33.7
Intersection	Total Intersection Crashes	77.31	19.6	84.02	21.2	161.53	40.9
Intersection	Other Collision	0.82	0.2	0.88	0.2	1.71	0.4
Ramp Terminal	Collision with Animal	0.00	0.0	0.00	0.0	0.00	0.0
Ramp Terminal	Collision with Fixed Object	0.87	0.2	1.45	0.4	2.32	0.6
Ramp Terminal	Collision with Other Object	0.00	0.0	0.05	0.0	0.05	0.0
Ramp Terminal	Other Single-vehicle Collision	0.73	0.2	0.24	0.1	0.97	0.2
Ramp Terminal	Collision with Parked Vehicle	0.08	0.0	0.14	0.0	0.22	0.1
Ramp Terminal	Total Single Vehicle Crashes	1.68	0.4	1.87	0.5	3.55	0.9
Ramp Terminal	Angle Collision	5.84	1.5	3.41	0.9	9.25	2.3
Ramp Terminal	Head-on Collision	0.22	0.1	0.14	0.0	0.36	0.1
Ramp Terminal	Other Multiple-vehicle Collision	0.15	0.0	0.24	0.1	0.38	0.1
Ramp Terminal	Rear-end Collision	3.08	0.8	2.53	0.6	5.61	1.4
Ramp Terminal	Sideswipe, Same Direction Collision	0.22	0.1	0.98	0.2	1.20	0.3
Ramp Terminal	Total Multiple Vehicle Crashes	9.52	2.4	7.29	1.8	16.81	4.3
Ramp Terminal	Total Ramp Terminal Crashes	11.20	2.8	9.16	2.3	20.35	5.1
	Total Crashes	180.30	45.6	215.07	54.4	395.38	100.0

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 21. Evaluation Message

Start Location (Sta. ft)	End Location (Sta. ft)	Message
676+00.000	676+15.090	Warning: for segment #22 (676+00.000 to 676+15.090), segment traffic volume (18,122 vpd) for 2046 is not within the model limit (17,800 vpd) for reliable results for segment type 2U
676+00.000	676+15.090	Warning: for segment #22 (676+00.000 to 676+15.090), segment traffic volume (18,489 vpd) for 2047 is not within the model limit (17,800 vpd) for reliable results for segment type 2U
676+00.000	676+15.090	Warning: for segment #22 (676+00.000 to 676+15.090), segment traffic volume (18,856 vpd) for 2048 is not within the model limit (17,800 vpd) for reliable results for segment type 2U
676+00.000	676+15.090	Warning: for segment #22 (676+00.000 to 676+15.090), segment traffic volume (19,223 vpd) for 2049 is not within the model limit (17,800 vpd) for reliable results for segment type 2U
676+00.000	676+15.090	Warning: for segment #22 (676+00.000 to 676+15.090), segment traffic volume (19,590 vpd) for 2050 is not within the model limit (17,800 vpd) for reliable results for segment type 2U
676+15.090	677+50.000	Warning: for segment #23 (676+15.090 to 677+50.000), segment traffic volume (18,122 vpd) for 2046 is not within the model limit (17,800 vpd) for reliable results for segment type 2U
676+15.090	677+50.000	Warning: for segment #23 (676+15.090 to 677+50.000), segment traffic volume (18,489 vpd) for 2047 is not within the model limit (17,800 vpd) for reliable results for segment type 2U
676+15.090	677+50.000	Warning: for segment #23 (676+15.090 to 677+50.000), segment traffic volume (18,856 vpd) for 2048 is not within the model limit (17,800 vpd) for reliable results for segment type 2U
676+15.090	677+50.000	Warning: for segment #23 (676+15.090 to 677+50.000), segment traffic volume (19,223 vpd) for 2049 is not within the model limit (17,800 vpd) for reliable results for segment type 2U
676+15.090	677+50.000	Warning: for segment #23 (676+15.090 to 677+50.000), segment traffic volume (19,590 vpd) for 2050 is not within the model limit (17,800 vpd) for reliable results for segment type 2U
677+50.000	679+00.000	Warning: for segment #24 (677+50.000 to 679+00.000), segment traffic volume (18,122 vpd) for 2046 is not within the model limit (17,800 vpd) for reliable results for segment type 2U
677+50.000	679+00.000	Warning: for segment #24 (677+50.000 to 679+00.000), segment traffic volume (18,489 vpd) for 2047 is not within the model limit (17,800 vpd) for reliable results for segment type 2U
677+50.000	679+00.000	Warning: for segment #24 (677+50.000 to 679+00.000), segment traffic volume (18,856 vpd) for 2048 is not within the model limit (17,800 vpd) for reliable results for segment type 2U
677+50.000	679+00.000	Warning: for segment #24 (677+50.000 to 679+00.000), segment traffic volume (19,223 vpd) for 2049 is not within the model limit (17,800 vpd) for reliable results for segment type 2U
677+50.000	679+00.000	Warning: for segment #24 (677+50.000 to 679+00.000), segment traffic volume (19,590 vpd) for 2050 is not within the model limit (17,800 vpd) for reliable results for segment type 2U
699+20.000	699+20.000	Warning: for intersection #2 (699+20.000 to 699+20.000), minor road traffic volume (3,618 vpd) for 2049 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
699+20.000	699+20.000	Warning: for intersection #2 (699+20.000 to 699+20.000), minor road traffic volume (3,925 vpd) for 2050 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
862+00.000	862+00.000	Warning: for intersection #6 (862+00.000 to 862+00.000), minor road traffic volume (3,550 vpd) for 2033 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
862+00.000	862+00.000	Warning: for intersection #6 (862+00.000 to 862+00.000), minor road traffic volume (3,626 vpd) for 2034 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
862+00.000	862+00.000	Warning: for intersection #6 (862+00.000 to 862+00.000), minor road traffic volume (3,703 vpd) for 2035 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
862+00.000	862+00.000	Warning: for intersection #6 (862+00.000 to 862+00.000), minor road traffic volume (3,779 vpd) for 2036 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
862+00.000	862+00.000	Warning: for intersection #6 (862+00.000 to 862+00.000), minor road traffic volume (3,855 vpd) for 2037 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
862+00.000	862+00.000	Warning: for intersection #6 (862+00.000 to 862+00.000), minor road traffic volume (3,932 vpd) for 2038 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
862+00.000	862+00.000	Warning: for intersection #6 (862+00.000 to 862+00.000), minor road traffic volume (4,008 vpd) for 2039 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
862+00.000	862+00.000	Warning: for intersection #6 (862+00.000 to 862+00.000), minor road traffic volume (4,085 vpd) for 2040 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST

Start Location (Sta. ft)	End Location (Sta. ft)	Message
862+00.000	862+00.000	Warning: for intersection #6 (862+00.000 to 862+00.000), minor road traffic volume (4,178 vpd) for 2041 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
862+00.000	862+00.000	Warning: for intersection #6 (862+00.000 to 862+00.000), minor road traffic volume (4,271 vpd) for 2042 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
862+00.000	862+00.000	Warning: for intersection #6 (862+00.000 to 862+00.000), minor road traffic volume (4,364 vpd) for 2043 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
862+00.000	862+00.000	Warning: for intersection #6 (862+00.000 to 862+00.000), minor road traffic volume (4,457 vpd) for 2044 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
862+00.000	862+00.000	Warning: for intersection #6 (862+00.000 to 862+00.000), minor road traffic volume (4,550 vpd) for 2045 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
862+00.000	862+00.000	Warning: for intersection #6 (862+00.000 to 862+00.000), minor road traffic volume (4,643 vpd) for 2046 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
862+00.000	862+00.000	Warning: for intersection #6 (862+00.000 to 862+00.000), minor road traffic volume (4,736 vpd) for 2047 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
862+00.000	862+00.000	Warning: for intersection #6 (862+00.000 to 862+00.000), minor road traffic volume (4,829 vpd) for 2048 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
862+00.000	862+00.000	Warning: for intersection #6 (862+00.000 to 862+00.000), minor road traffic volume (4,922 vpd) for 2049 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
862+00.000	862+00.000	Warning: for intersection #6 (862+00.000 to 862+00.000), minor road traffic volume (5,015 vpd) for 2050 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST

Section 3 Evaluation

Section: Section 3
Evaluation Start Location: 585+00.000
Evaluation End Location: 676+00.000
Area Type: Rural
Functional Class: Arterial
Type of Alignment: Undivided, Multilane
Model Category: Rural, Multilane
Calibration Factor: 4ST=1.0; 4U=1.0;

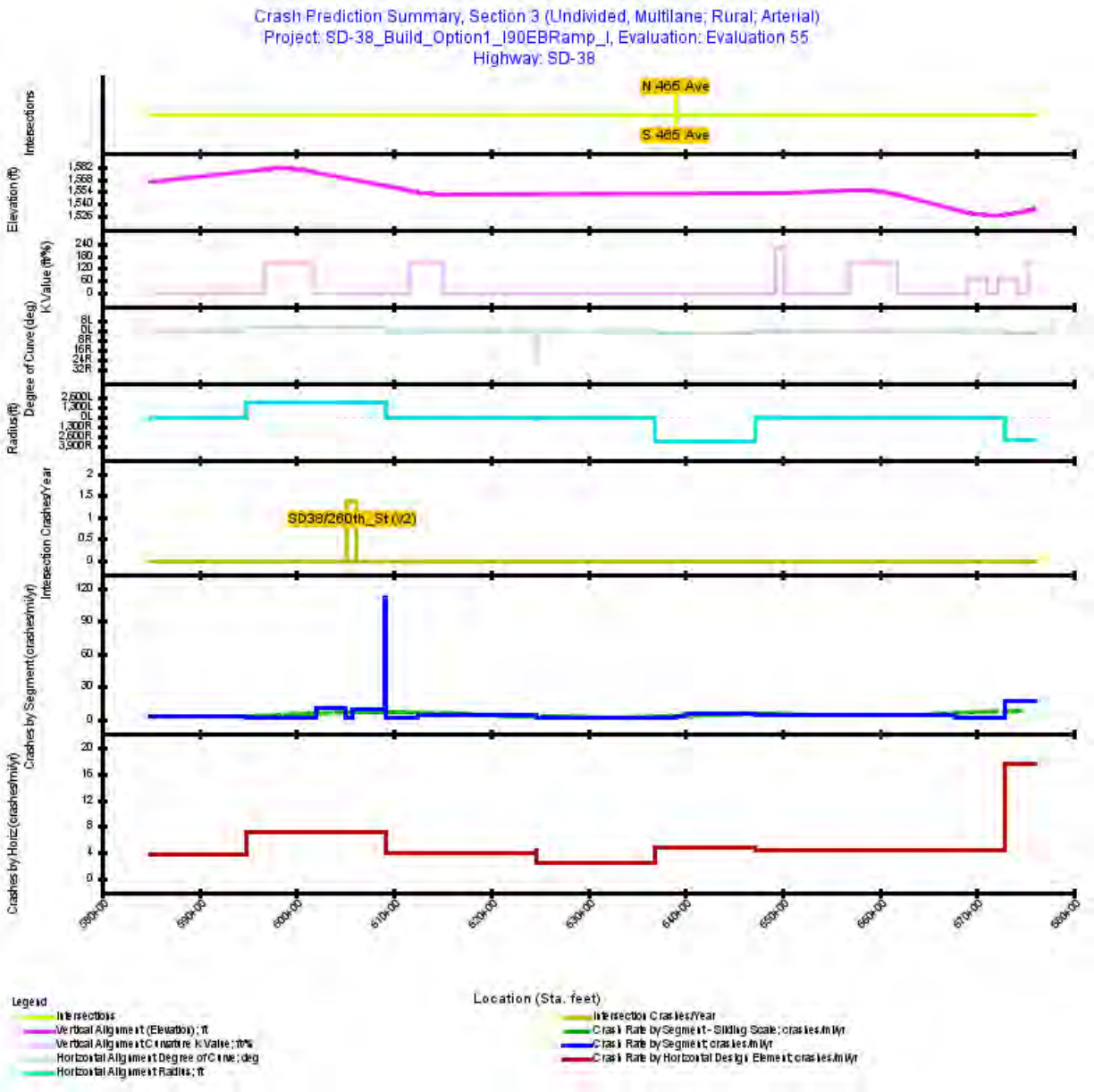

Figure 2. Crash Prediction Summary (Section 3)

Table 22. Observed Crashes Used in the Evaluation (Section 3)

Year	Observed Crashes	Total Crashes Used	FI Crashes	FI no/C Crashes	PDO Crashes
2018	1	1	1	0	0
2019	3	3	1	0	2
2020	3	2	0	0	2
2021	3	3	2	0	1
2022	1	1	0	0	1
All Years	11 [1]	10	4	0	6

Footnotes

[1] Note: Observed crash data that does not comply with the associated CPM model requirements may not be used in EB processing.

Table 23. Evaluation Highway - Homogeneous Segments (Section 3)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
1	Rural Multi-Lane Segment Four-lane Undivided	585+00.000	594+84.940	984.94	0.1865	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
2	Rural Multi-Lane Segment Four-lane Undivided	594+84.940	600+00.000	515.06	0.0975	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
3	Rural Multi-Lane Segment Four-lane Undivided	600+00.000	601+00.000	100.00	0.0189	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
4	Rural Multi-Lane Segment Four-lane Undivided	601+00.000	602+00.000	100.00	0.0189	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
5	Rural Multi-Lane Segment Four-lane Undivided	602+00.000	605+00.000	300.00	0.0568	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
6	Rural Multi-Lane Segment Four-lane Undivided	605+00.000	605+60.000	60.00	0.0114	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	0.00	0.00	None	0.00	false	false	0:1	0:1
7	Rural Multi-Lane Segment Four-lane Undivided	605+60.000	605+70.000	10.00	0.0019	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
8	Rural Multi-Lane Segment Four-lane Undivided	605+70.000	605+75.000	5.00	0.0009	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
9	Rural Multi-Lane Segment Four-lane Undivided	605+75.000	609+00.000	325.00	0.0616	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
10	Rural Multi-Lane Segment Four-lane Undivided	609+00.000	609+21.930	21.93	0.0042	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
11	Rural Multi-Lane Segment Four-lane Undivided	609+21.930	611+40.000	218.07	0.0413	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
12	Rural Multi-Lane Segment Four-lane Undivided	611+40.000	612+50.000	110.00	0.0208	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
13	Rural Multi-Lane Segment Four-lane Undivided	612+50.000	624+64.530	1,214.53	0.2300	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
14	Rural Multi-Lane Segment Four-lane Undivided	624+64.530	636+92.820	1,228.29	0.2326	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
15	Rural Multi-Lane Segment Four-lane Undivided	636+92.820	639+00.000	207.18	0.0392	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
16	Rural Multi-Lane Segment Four-lane Undivided	639+00.000	640+00.000	100.00	0.0189	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
17	Rural Multi-Lane Segment Four-lane Undivided	640+00.000	647+26.050	726.05	0.1375	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
18	Rural Multi-Lane Segment Four-lane Undivided	647+26.050	667+80.000	2,053.95	0.3890	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
19	Rural Multi-Lane Segment Four-lane Undivided	667+80.000	668+80.000	100.00	0.0189	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	0.00	0.00	None	0.00	false	false	0:1	0:1
20	Rural Multi-Lane Segment Four-lane Undivided	668+80.000	672+86.110	406.11	0.0769	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
21	Rural Multi-Lane Segment Four-lane Undivided	672+86.110	676+00.000	313.89	0.0594	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1

Table 24. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 3)

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
1	TWLTL	585+00.000	600+00.000	2025	2025	Total	0.6900
1	TWLTL	612+50.000	639+00.000	2025	2025	Total	0.6900
1	TWLTL	640+00.000	676+00.000	2025	2025	Total	0.6900

Table 25. Crash History Highway - Homogeneous Segments (Section 3)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
1	Rural Multi-Lane Segment Four-lane Undivided	585+00.000	594+84.940	984.94	0.1865	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
2	Rural Multi-Lane Segment Four-lane Undivided	594+84.940	600+00.000	515.06	0.0975	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
3	Rural Multi-Lane Segment Four-lane Undivided	600+00.000	601+00.000	100.00	0.0189	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
4	Rural Multi-Lane Segment Four-lane Undivided	601+00.000	602+00.000	100.00	0.0189	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
5	Rural Multi-Lane Segment Four-lane Undivided	602+00.000	605+00.000	300.00	0.0568	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
6	Rural Multi-Lane Segment Four-lane Undivided	605+00.000	605+60.000	60.00	0.0114	2018-2022: 4,325	12.00	12.00	8.00	0.00	0.00	None	0.00	false	false	0:1	0:1
7	Rural Multi-Lane Segment Four-lane Undivided	605+60.000	605+70.000	10.00	0.0019	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
8	Rural Multi-Lane Segment Four-lane Undivided	605+70.000	605+75.000	5.00	0.0009	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
9	Rural Multi-Lane Segment Four-lane Undivided	605+75.000	609+00.000	325.00	0.0616	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
10	Rural Multi-Lane Segment Four-lane Undivided	609+00.000	609+21.930	21.93	0.0042	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
11	Rural Multi-Lane Segment Four-lane Undivided	609+21.930	611+40.000	218.07	0.0413	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
12	Rural Multi-Lane Segment Four-lane Undivided	611+40.000	612+50.000	110.00	0.0208	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
13	Rural Multi-Lane Segment Four-lane Undivided	612+50.000	624+64.530	1,214.53	0.2300	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
14	Rural Multi-Lane Segment Four-lane Undivided	624+64.530	636+92.820	1,228.29	0.2326	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
15	Rural Multi-Lane Segment Four-lane Undivided	636+92.820	639+00.000	207.18	0.0392	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
16	Rural Multi-Lane Segment Four-lane Undivided	639+00.000	640+00.000	100.00	0.0189	2018-2022: 4,325	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
17	Rural Multi-Lane Segment Four-lane Undivided	640+00.000	647+26.050	726.05	0.1375	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
18	Rural Multi-Lane Segment Four-lane Undivided	647+26.050	667+80.000	2,053.95	0.3890	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
19	Rural Multi-Lane Segment Four-lane Undivided	667+80.000	668+80.000	100.00	0.0189	2018-2022: 4,325	12.00	12.00	8.00	0.00	0.00	None	0.00	false	false	0:1	0:1
20	Rural Multi-Lane Segment Four-lane Undivided	668+80.000	672+86.110	406.11	0.0769	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
21	Rural Multi-Lane Segment Four-lane Undivided	672+86.110	676+00.000	313.89	0.0594	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1

Table 26. Evaluation Intersection (Section 3)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
1	SD38/260th_St (v2)	Rural Multi-Lane Intersection Four-Legged w/STOP control	605+70.000	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	2025: 1,508; 2026: 1,706; 2027: 1,904; 2028: 2,102; 2029: 2,300; 2030: 2,472; 2031: 2,645; 2032: 2,818; 2033: 2,990; 2034: 3,163; 2035: 3,336; 2036: 3,509; 2037: 3,681; 2038: 3,854; 2039: 4,027; 2040: 4,200; 2041: 4,260; 2042: 4,320; 2043: 4,380; 2044: 4,440; 2045: 4,500; 2046: 4,560; 2047: 4,620; 2048: 4,680; 2049: 4,740; 2050: 4,800	4	Stop-Controlled	2	1	16.83	13.71	false

Table 27. Crash History Intersection (Section 3)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
1	SD38/260th_St (v2)	Rural Multi-Lane Intersection Four-Legged w/STOP control	605+70.000	2018-2022: 4,325	2018-2022: 915	4	Stop-Controlled	2	1	16.83	13.71	false

Table 28. Expected Highway Crash Rates and Frequencies Summary (Section 3)

First Year of Analysis	**2025**
Last Year of Analysis	**2050**
Evaluated Length (mi)	**1.7235**
Average Future Road AADT (vpd)	**14,422**
Expected Crashes	
Total Crashes	**253.20**
Fatal and Injury Crashes	**132.44**
Fatal and Serious Injury Crashes	**82.70**
Property-Damage-Only Crashes	**120.76**
Percent of Total Expected Crashes	
Percent Fatal and Injury Crashes (%)	**52**
Percent Fatal and Serious Injury Crashes (%)	**33**
Percent Property-Damage-Only Crashes (%)	**48**
Expected Crash Rate	
Crash Rate (crashes/mi/yr)	**5.6505**
FI Crash Rate (crashes/mi/yr)	**2.9555**
FI no/C Crash Rate (crashes/mi/yr)	**1.8456**
PDO Crash Rate (crashes/mi/yr)	**2.6950**
Expected Travel Crash Rate	
Total Travel (million veh-mi)	**235.89**
Travel Crash Rate (crashes/million veh-mi)	**1.07**
Travel FI Crash Rate (crashes/million veh-mi)	**0.56**
Travel FI no/C Crash Rate (crashes/million veh-mi)	**0.35**
Travel PDO Crash Rate (crashes/million veh-mi)	**0.51**

Table 29. Expected Crash Frequencies and Rates by Highway Segment/Intersection (Section 3)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected FI no/C Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted FI no/C Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) FI no/C Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
1	585+00.000	594+84.940	0.1865	17.884	18.701	0.6878	0.5117	0.3188	0.1762	0.7193	0.4240	0.2248	0.2953	-0.0314	0.0877	0.0940	-0.1191	3.6873	0.84	
2	594+84.940	600+00.000	0.0975	4.666	9.779	0.1795	0.1087	0.0678	0.0707	0.3761	0.2217	0.1176	0.1544	-0.1967	-0.1130	-0.0498	-0.0837	1.8399	0.42	
3	600+00.000	601+00.000	0.0189	0.912	1.911	0.0351	0.0212	0.0132	0.0138	0.0735	0.0433	0.0230	0.0302	-0.0384	-0.0221	-0.0098	-0.0163	1.8518	0.42	
4	601+00.000	602+00.000	0.0189	0.912	1.911	0.0351	0.0212	0.0132	0.0138	0.0735	0.0433	0.0230	0.0302	-0.0384	-0.0221	-0.0098	-0.0163	1.8518	0.42	
5	602+00.000	605+00.000	0.0568	15.348	7.486	0.5903	0.1555	0.0969	0.4348	0.2879	0.1665	0.0852	0.1214	0.3024	-0.0110	0.0117	0.3134	10.3895	1.90	
6	605+00.000	605+60.000	0.0114	0.743	1.629	0.0286	0.0173	0.0108	0.0113	0.0627	0.0362	0.0185	0.0264	-0.0341	-0.0190	-0.0078	-0.0151	2.5153	0.46	
7	605+60.000	605+70.000	0.0019	0.119	0.249	0.0046	0.0028	0.0017	0.0018	0.0096	0.0056	0.0028	0.0040	-0.0050	-0.0028	-0.0011	-0.0022	2.4181	0.44	
SD38/260th_St (v2)	605+70.000			35.375	96.924	1.3606	0.5456	0.3469	0.8150	3.7279	1.7583	0.8841	1.9696	-2.3673	-1.2127	-0.5372	-1.1546			0.20
8	605+70.000	605+75.000	0.0009	0.059	0.125	0.0023	0.0014	0.0009	0.0009	0.0048	0.0028	0.0014	0.0020	-0.0025	-0.0014	-0.0006	-0.0011	2.4181	0.44	
9	605+75.000	609+00.000	0.0616	15.646	8.110	0.6018	0.5117	0.3188	0.0901	0.3119	0.1804	0.0923	0.1315	0.2898	0.3313	0.2266	-0.0415	9.7763	1.79	
10	609+00.000	609+21.930	0.0042	12.037	0.547	0.4630	0.0149	0.0093	0.4480	0.0210	0.0122	0.0062	0.0089	0.4419	0.0028	0.0031	0.4392	111.4663	20.38	
11	609+21.930	611+40.000	0.0413	2.597	5.442	0.0999	0.0605	0.0377	0.0394	0.2093	0.1210	0.0619	0.0883	-0.1094	-0.0605	-0.0242	-0.0489	2.4181	0.44	
12	611+40.000	612+50.000	0.0208	1.310	2.745	0.0504	0.0305	0.0190	0.0199	0.1056	0.0611	0.0312	0.0445	-0.0552	-0.0305	-0.0122	-0.0247	2.4181	0.44	
13	612+50.000	624+64.530	0.2300	26.091	30.137	1.0035	0.4602	0.2868	0.5433	1.1591	0.6701	0.3426	0.4890	-0.1556	-0.2099	-0.0558	0.0543	4.3625	0.80	
14	624+64.530	636+92.820	0.2326	14.544	30.479	0.5594	0.3389	0.2112	0.2205	1.1723	0.6777	0.3465	0.4945	-0.6129	-0.3388	-0.1353	-0.2740	2.4045	0.44	
15	636+92.820	639+00.000	0.0392	2.453	5.141	0.0944	0.0572	0.0356	0.0372	0.1977	0.1143	0.0584	0.0834	-0.1034	-0.0572	-0.0228	-0.0462	2.4045	0.44	
16	639+00.000	640+00.000	0.0189	1.282	2.935	0.0493	0.0297	0.0185	0.0196	0.1129	0.0653	0.0334	0.0476	-0.0636	-0.0356	-0.0149	-0.0280	2.6043	0.48	
17	640+00.000	647+26.050	0.1375	20.307	18.016	0.7810	0.3079	0.1918	0.4732	0.6929	0.4006	0.2048	0.2923	0.0881	-0.0927	-0.0130	0.1808	5.6799	1.04	
18	647+26.050	667+80.000	0.3890	47.740	50.967	1.8362	0.8064	0.5024	1.0298	1.9603	1.1333	0.5793	0.8269	-0.1241	-0.3270	-0.0769	0.2029	4.7201	0.86	
19	667+80.000	668+80.000	0.0189	1.232	2.700	0.0474	0.0286	0.0178	0.0188	0.1039	0.0600	0.0307	0.0438	-0.0565	-0.0314	-0.0129	-0.0250	2.5012	0.46	
20	668+80.000	672+86.110	0.0769	4.809	10.077	0.1849	0.1120	0.0698	0.0729	0.3876	0.2241	0.1145	0.1635	-0.2026	-0.1120	-0.0447	-0.0906	2.4045	0.44	
21	672+86.110	676+00.000	0.0594	27.137	7.789	1.0437	0.9499	0.5919	0.0939	0.2996	0.1732	0.0885	0.1264	0.7442	0.7767	0.5033	-0.0325	17.5567	3.21	
All Segments			1.7235	217.827	216.876	8.3780	4.5482	2.8340	3.8297	8.3414	4.8368	2.4867	3.5046	0.0366	-0.2886	0.3472	0.3252	4.8611	0.92	
All Intersections				35.375	96.924	1.3606	0.5456	0.3469	0.8150	3.7279	1.7583	0.8841	1.9696	-2.3673	-1.2127	-0.5372	-1.1546			0.20
Total			1.7235	253.202	313.801	9.7385	5.0938	3.1808	4.6448	12.0693	6.5951	3.3708	5.4742	-2.3307	-1.5013	-0.1900	-0.8294	5.6505		

Table 30. Expected Crash Frequencies and Rates by Horizontal Design Element (Section 3)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected FI no/C Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted FI no/C Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) FI no/C Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)
Tangent	585+00.000	594+84.940	0.1865	17.884	18.701	0.6878	0.5117	0.3188	0.1762	0.7193	0.4240	0.2248	0.2953	-0.0314	0.0877	0.0940	-0.1191	3.6873	0.84
Simple Curve 1	594+84.940	609+21.930	0.2722	50.443	31.748	1.9401	0.8548	0.5326	1.0853	1.2211	0.7120	0.3700	0.5090	0.7190	0.1428	0.1626	0.5762	7.1286	1.35
Tangent	609+21.930	624+64.300	0.2921	29.992	38.318	1.1535	0.5512	0.3434	0.6024	1.4738	0.8521	0.4357	0.6217	-0.3202	-0.3009	-0.0922	-0.0193	3.9489	0.72
Simple Curve 2	624+64.300	624+64.530	0.0000	0.005	0.006	0.0002	0.0001	0.0001	0.0001	0.0002	0.0001	0.0001	0.0001	-0.0000	-0.0000	-0.0000	0.0000	4.3625	0.80
Tangent	624+64.530	636+92.820	0.2326	14.544	30.479	0.5594	0.3389	0.2112	0.2205	1.1723	0.6777	0.3465	0.4945	-0.6129	-0.3388	-0.1353	-0.2740	2.4045	0.44
Simple Curve 3	636+92.820	647+26.050	0.1957	24.043	26.092	0.9247	0.3947	0.2460	0.5300	1.0036	0.5802	0.2966	0.4233	-0.0788	-0.1855	-0.0507	0.1067	4.7254	0.86
Tangent	647+26.050	672+86.110	0.4849	53.780	63.744	2.0685	0.9470	0.5901	1.1215	2.4517	1.4174	0.7246	1.0343	-0.3832	-0.4704	-0.1345	0.0872	4.2661	0.78
Simple Curve 4	672+86.110	676+00.000	0.0594	27.137	7.789	1.0437	0.9499	0.5919	0.0939	0.2996	0.1732	0.0885	0.1264	0.7442	0.7767	0.5033	-0.0325	17.5567	3.21

Table 31. Predicted Crash Frequencies by Year (Section 3)

Year	Total Crashes	FI Crashes	Percent FI (%)	FI/no C Crashes	Percent FI/no C (%)	PDO Crashes	Percent PDO (%)
2025	4.43	2.44	55.091	1.40	31.489	1.99	44.909
2026	6.47	3.62	55.893	2.02	31.235	2.85	44.107
2027	7.48	4.16	55.579	2.28	30.476	3.32	44.421
2028	8.52	4.71	55.309	2.54	29.817	3.81	44.691
2029	9.58	5.28	55.073	2.80	29.238	4.30	44.927
2030	9.90	5.45	55.007	2.88	29.064	4.45	44.993
2031	10.22	5.62	54.946	2.95	28.898	4.61	45.054
2032	10.54	5.79	54.891	3.03	28.738	4.76	45.109
2033	10.87	5.96	54.840	3.11	28.585	4.91	45.160
2034	11.19	6.13	54.794	3.18	28.438	5.06	45.206
2035	11.52	6.31	54.752	3.26	28.296	5.21	45.248
2036	11.84	6.48	54.712	3.33	28.160	5.36	45.288
2037	12.17	6.65	54.676	3.41	28.029	5.52	45.324
2038	12.50	6.83	54.643	3.49	27.901	5.67	45.357
2039	12.83	7.01	54.612	3.56	27.779	5.82	45.388
2040	13.16	7.18	54.583	3.64	27.659	5.98	45.417
2041	13.50	7.36	54.542	3.72	27.547	6.14	45.458
2042	13.84	7.54	54.503	3.80	27.438	6.30	45.497
2043	14.19	7.73	54.465	3.88	27.331	6.46	45.535
2044	14.53	7.91	54.427	3.96	27.227	6.62	45.573
2045	14.88	8.09	54.391	4.04	27.126	6.79	45.609
2046	15.23	8.28	54.356	4.12	27.027	6.95	45.644
2047	15.57	8.46	54.321	4.19	26.930	7.12	45.679
2048	15.93	8.65	54.287	4.27	26.836	7.28	45.713
2049	16.28	8.83	54.255	4.35	26.743	7.45	45.745
2050	16.63	9.02	54.222	4.43	26.653	7.61	45.778
Total	313.80	171.47	54.644	87.64	27.929	142.33	45.356
Average	12.07	6.59	54.644	3.37	27.929	5.47	45.356

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 32. Expected Crash Frequencies by Year (Section 3)

Year	Total Crashes	FI Crashes	Percent FI (%)	FI/no C Crashes	Percent FI/no C (%)	PDO Crashes	Percent PDO (%)
2025	3.57	1.89	52.734	1.32	36.826	1.69	47.224
2026	5.22	2.79	53.501	1.91	36.529	2.42	46.381
2027	6.04	3.21	53.201	2.15	35.641	2.82	46.711
2028	6.87	3.64	52.942	2.40	34.871	3.23	46.995
2029	7.73	4.07	52.716	2.64	34.194	3.65	47.243
2030	7.99	4.21	52.653	2.71	33.990	3.78	47.313
2031	8.25	4.34	52.595	2.79	33.795	3.91	47.377
2032	8.51	4.47	52.542	2.86	33.609	4.04	47.435
2033	8.77	4.60	52.494	2.93	33.430	4.16	47.488
2034	9.03	4.74	52.449	3.00	33.258	4.29	47.536
2035	9.29	4.87	52.409	3.08	33.092	4.42	47.581
2036	9.56	5.00	52.371	3.15	32.933	4.55	47.623
2037	9.82	5.14	52.336	3.22	32.779	4.68	47.660
2038	10.09	5.28	52.304	3.29	32.630	4.81	47.696
2039	10.35	5.41	52.275	3.36	32.487	4.94	47.728
2040	10.62	5.55	52.247	3.44	32.347	5.07	47.758
2041	10.89	5.69	52.209	3.51	32.216	5.21	47.801
2042	11.17	5.83	52.171	3.58	32.089	5.34	47.843
2043	11.45	5.97	52.134	3.66	31.964	5.48	47.883
2044	11.72	6.11	52.098	3.73	31.842	5.62	47.922
2045	12.01	6.25	52.064	3.81	31.724	5.76	47.960
2046	12.29	6.39	52.030	3.88	31.608	5.90	47.998
2047	12.57	6.54	51.997	3.96	31.495	6.04	48.034
2048	12.85	6.68	51.964	4.03	31.384	6.18	48.069
2049	13.13	6.82	51.933	4.11	31.276	6.32	48.104
2050	13.42	6.96	51.902	4.18	31.170	6.46	48.138
Total	253.20	132.44	52.305	82.70	32.662	120.76	47.695
Average	9.74	5.09	52.305	3.18	32.662	4.64	47.695

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 33. Comparing Predicted and Expected Crashes for the Evaluation Period (Section 3)

Scope	Total Crashes	FI Crashes	Percent FI (%)	FI/no C Crashes	Percent FI/no C (%)	PDO Crashes	Percent PDO (%)
Predicted	313.80	171.47	54.644	87.64	27.929	142.33	45.356
Expected	253.20	132.44	52.305	82.70	32.662	120.76	47.695
Expected - Predicted	-60.60	-39.03		-4.94		-21.57	
Percent Difference	-23.93	-29.47		-5.97		-17.86	

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 34. Expected Crash Type Distribution (Section 3)

Element Type	Crash Type	FI Crashes	Percent FI (%)	FI/no C Crashes	Percent FI/no C (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Single	28.14	11.1	22.40	8.8	23.60	9.3	51.84	20.5
Highway Segment	Total Single Vehicle Crashes	28.14	11.1	22.40	8.8	23.60	9.3	51.84	20.5
Highway Segment	Angle Collision	41.62	16.4	25.64	10.1	35.65	14.1	77.55	30.6
Highway Segment	Head-on Collision	3.43	1.4	3.17	1.3	0.10	0.0	1.96	0.8
Highway Segment	Rear-end Collision	36.07	14.2	15.99	6.3	21.91	8.7	53.59	21.2
Highway Segment	Sideswipe	5.68	2.2	3.24	1.3	11.95	4.7	21.35	8.4
Highway Segment	Total Multiple Vehicle Crashes	86.80	34.3	48.04	19.0	69.60	27.5	154.44	61.0
Highway Segment	Total Highway Segment Crashes	118.25	46.7	73.68	29.1	99.57	39.3	217.83	86.0
Highway Segment	Other Collision	3.31	1.3	3.24	1.3	6.37	2.5	11.54	4.6
Intersection	Single	2.10	0.8	1.79	0.7	5.15	2.0	7.15	2.8
Intersection	Total Single Vehicle Crashes	2.10	0.8	1.79	0.7	5.15	2.0	7.15	2.8
Intersection	Angle Collision	7.57	3.0	5.15	2.0	6.19	2.4	13.97	5.5
Intersection	Head-on Collision	0.26	0.1	0.21	0.1	0.32	0.1	0.57	0.2
Intersection	Rear-end Collision	3.02	1.2	0.97	0.4	5.09	2.0	8.07	3.2
Intersection	Sideswipe	0.60	0.2	0.36	0.1	3.31	1.3	3.79	1.5
Intersection	Total Multiple Vehicle Crashes	11.45	4.5	6.69	2.6	14.90	5.9	26.39	10.4
Intersection	Total Intersection Crashes	14.20	5.6	9.02	3.6	21.21	8.4	35.34	14.0
Intersection	Other Collision	0.65	0.3	0.53	0.2	1.17	0.5	1.80	0.7
	Total Crashes	132.45	52.3	82.70	32.7	120.78	47.7	253.17	100.0

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 35. Evaluation Message

Start Location (Sta. ft)	End Location (Sta. ft)	Message
585+00.000	594+84.940	Warning: for segment #1 (585+00.000 to 594+84.940), no foreslope data available for left side of road for use by AFM3ru, using 1.0
585+00.000	594+84.940	Warning: for segment #1 (585+00.000 to 594+84.940), no foreslope data available for right side of road for use by AFM3ru, using 1.0
594+84.940	600+00.000	Warning: for segment #2 (594+84.940 to 600+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
594+84.940	600+00.000	Warning: for segment #2 (594+84.940 to 600+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
600+00.000	601+00.000	Warning: for segment #3 (600+00.000 to 601+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
600+00.000	601+00.000	Warning: for segment #3 (600+00.000 to 601+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
601+00.000	602+00.000	Warning: for segment #4 (601+00.000 to 602+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
601+00.000	602+00.000	Warning: for segment #4 (601+00.000 to 602+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
602+00.000	605+00.000	Warning: for segment #5 (602+00.000 to 605+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
602+00.000	605+00.000	Warning: for segment #5 (602+00.000 to 605+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+00.000	605+60.000	Warning: for segment #6 (605+00.000 to 605+60.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+00.000	605+60.000	Warning: for segment #6 (605+00.000 to 605+60.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+60.000	605+70.000	Warning: for segment #7 (605+60.000 to 605+70.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+60.000	605+70.000	Warning: for segment #7 (605+60.000 to 605+70.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+70.000	605+75.000	Warning: for segment #8 (605+70.000 to 605+75.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+70.000	605+75.000	Warning: for segment #8 (605+70.000 to 605+75.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+75.000	609+00.000	Warning: for segment #9 (605+75.000 to 609+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+75.000	609+00.000	Warning: for segment #9 (605+75.000 to 609+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
609+00.000	609+21.930	Warning: for segment #10 (609+00.000 to 609+21.930), no foreslope data available for left side of road for use by AFM3ru, using 1.0
609+00.000	609+21.930	Warning: for segment #10 (609+00.000 to 609+21.930), no foreslope data available for right side of road for use by AFM3ru, using 1.0
609+21.930	611+40.000	Warning: for segment #11 (609+21.930 to 611+40.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
609+21.930	611+40.000	Warning: for segment #11 (609+21.930 to 611+40.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
611+40.000	612+50.000	Warning: for segment #12 (611+40.000 to 612+50.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
611+40.000	612+50.000	Warning: for segment #12 (611+40.000 to 612+50.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
612+50.000	624+64.530	Warning: for segment #13 (612+50.000 to 624+64.530), no foreslope data available for left side of road for use by AFM3ru, using 1.0
612+50.000	624+64.530	Warning: for segment #13 (612+50.000 to 624+64.530), no foreslope data available for right side of road for use by AFM3ru, using 1.0
624+64.530	636+92.820	Warning: for segment #14 (624+64.530 to 636+92.820), no foreslope data available for left side of road for use by AFM3ru, using 1.0
624+64.530	636+92.820	Warning: for segment #14 (624+64.530 to 636+92.820), no foreslope data available for right side of road for use by AFM3ru, using 1.0
636+92.820	639+00.000	Warning: for segment #15 (636+92.820 to 639+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
636+92.820	639+00.000	Warning: for segment #15 (636+92.820 to 639+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0

Start Location (Sta. ft)	End Location (Sta. ft)	Message
639+00.000	640+00.000	Warning: for segment #16 (639+00.000 to 640+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
639+00.000	640+00.000	Warning: for segment #16 (639+00.000 to 640+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
640+00.000	647+26.050	Warning: for segment #17 (640+00.000 to 647+26.050), no foreslope data available for left side of road for use by AFM3ru, using 1.0
640+00.000	647+26.050	Warning: for segment #17 (640+00.000 to 647+26.050), no foreslope data available for right side of road for use by AFM3ru, using 1.0
647+26.050	667+80.000	Warning: for segment #18 (647+26.050 to 667+80.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
647+26.050	667+80.000	Warning: for segment #18 (647+26.050 to 667+80.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
667+80.000	668+80.000	Warning: for segment #19 (667+80.000 to 668+80.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
667+80.000	668+80.000	Warning: for segment #19 (667+80.000 to 668+80.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
668+80.000	672+86.110	Warning: for segment #20 (668+80.000 to 672+86.110), no foreslope data available for left side of road for use by AFM3ru, using 1.0
668+80.000	672+86.110	Warning: for segment #20 (668+80.000 to 672+86.110), no foreslope data available for right side of road for use by AFM3ru, using 1.0
672+86.110	676+00.000	Warning: for segment #21 (672+86.110 to 676+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
672+86.110	676+00.000	Warning: for segment #21 (672+86.110 to 676+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
585+00.000	594+84.940	Warning: for segment #1 (585+00.000 to 594+84.940), no foreslope data available for left side of road for use by AFM3ru, using 1.0
585+00.000	594+84.940	Warning: for segment #1 (585+00.000 to 594+84.940), no foreslope data available for right side of road for use by AFM3ru, using 1.0
594+84.940	600+00.000	Warning: for segment #2 (594+84.940 to 600+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
594+84.940	600+00.000	Warning: for segment #2 (594+84.940 to 600+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
600+00.000	601+00.000	Warning: for segment #3 (600+00.000 to 601+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
600+00.000	601+00.000	Warning: for segment #3 (600+00.000 to 601+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
601+00.000	602+00.000	Warning: for segment #4 (601+00.000 to 602+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
601+00.000	602+00.000	Warning: for segment #4 (601+00.000 to 602+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
602+00.000	605+00.000	Warning: for segment #5 (602+00.000 to 605+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
602+00.000	605+00.000	Warning: for segment #5 (602+00.000 to 605+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+00.000	605+60.000	Warning: for segment #6 (605+00.000 to 605+60.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+00.000	605+60.000	Warning: for segment #6 (605+00.000 to 605+60.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+60.000	605+70.000	Warning: for segment #7 (605+60.000 to 605+70.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+60.000	605+70.000	Warning: for segment #7 (605+60.000 to 605+70.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+70.000	605+75.000	Warning: for segment #8 (605+70.000 to 605+75.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+70.000	605+75.000	Warning: for segment #8 (605+70.000 to 605+75.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+75.000	609+00.000	Warning: for segment #9 (605+75.000 to 609+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+75.000	609+00.000	Warning: for segment #9 (605+75.000 to 609+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
609+00.000	609+21.930	Warning: for segment #10 (609+00.000 to 609+21.930), no foreslope data available for left side of road for use by AFM3ru, using 1.0
609+00.000	609+21.930	Warning: for segment #10 (609+00.000 to 609+21.930), no foreslope data available for right side of road for use by AFM3ru, using 1.0

Start Location (Sta. ft)	End Location (Sta. ft)	Message
609+21.930	611+40.000	Warning: for segment #11 (609+21.930 to 611+40.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
609+21.930	611+40.000	Warning: for segment #11 (609+21.930 to 611+40.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
611+40.000	612+50.000	Warning: for segment #12 (611+40.000 to 612+50.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
611+40.000	612+50.000	Warning: for segment #12 (611+40.000 to 612+50.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
612+50.000	624+64.530	Warning: for segment #13 (612+50.000 to 624+64.530), no foreslope data available for left side of road for use by AFM3ru, using 1.0
612+50.000	624+64.530	Warning: for segment #13 (612+50.000 to 624+64.530), no foreslope data available for right side of road for use by AFM3ru, using 1.0
624+64.530	636+92.820	Warning: for segment #14 (624+64.530 to 636+92.820), no foreslope data available for left side of road for use by AFM3ru, using 1.0
624+64.530	636+92.820	Warning: for segment #14 (624+64.530 to 636+92.820), no foreslope data available for right side of road for use by AFM3ru, using 1.0
636+92.820	639+00.000	Warning: for segment #15 (636+92.820 to 639+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
636+92.820	639+00.000	Warning: for segment #15 (636+92.820 to 639+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
639+00.000	640+00.000	Warning: for segment #16 (639+00.000 to 640+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
639+00.000	640+00.000	Warning: for segment #16 (639+00.000 to 640+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
640+00.000	647+26.050	Warning: for segment #17 (640+00.000 to 647+26.050), no foreslope data available for left side of road for use by AFM3ru, using 1.0
640+00.000	647+26.050	Warning: for segment #17 (640+00.000 to 647+26.050), no foreslope data available for right side of road for use by AFM3ru, using 1.0
647+26.050	667+80.000	Warning: for segment #18 (647+26.050 to 667+80.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
647+26.050	667+80.000	Warning: for segment #18 (647+26.050 to 667+80.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
667+80.000	668+80.000	Warning: for segment #19 (667+80.000 to 668+80.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
667+80.000	668+80.000	Warning: for segment #19 (667+80.000 to 668+80.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
668+80.000	672+86.110	Warning: for segment #20 (668+80.000 to 672+86.110), no foreslope data available for left side of road for use by AFM3ru, using 1.0
668+80.000	672+86.110	Warning: for segment #20 (668+80.000 to 672+86.110), no foreslope data available for right side of road for use by AFM3ru, using 1.0
672+86.110	676+00.000	Warning: for segment #21 (672+86.110 to 676+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
672+86.110	676+00.000	Warning: for segment #21 (672+86.110 to 676+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0

Section 5 Evaluation

Section: Section 5
Evaluation Start Location: 862+60.000
Evaluation End Location: 948+50.000
Area Type: Rural

Functional Class: Arterial
Type of Alignment: Undivided, Multilane
Model Category: Rural, Multilane
Calibration Factor: 4ST=1.0; 4U=1.0;

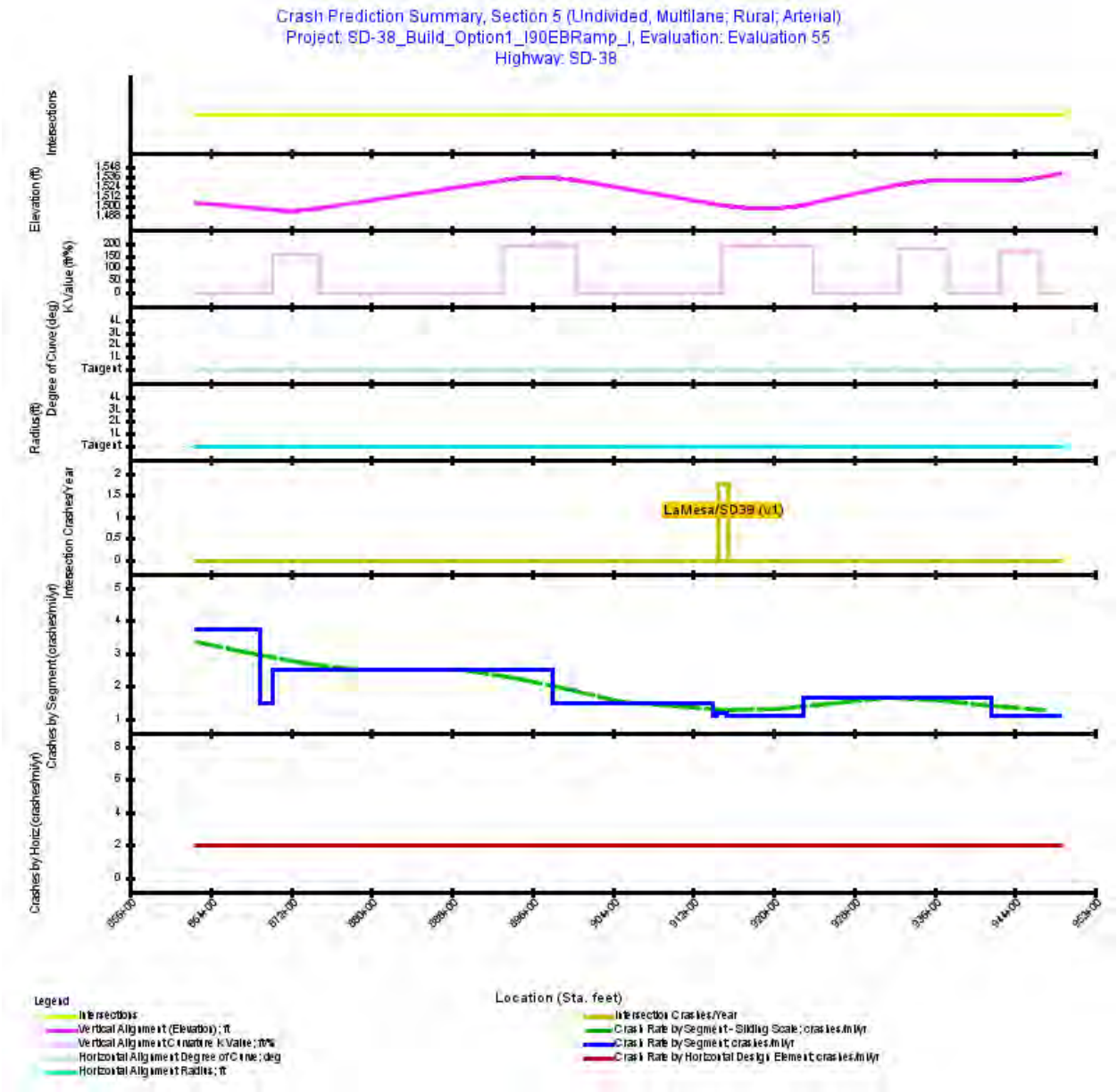

Figure 3. Crash Prediction Summary (Section 5)

Table 36. Observed Crashes Used in the Evaluation (Section 5)

Year	Observed Crashes	Total Crashes Used	FI Crashes	FI no/C Crashes	PDO Crashes
2018	1	1	0	0	1
2019	0	0	0	0	0
2020	3	3	2	2	1
2021	2	2	1	1	1
2022	1	1	1	1	0
All Years	7 [1]	7	4	4	3

Footnotes

[1] Note: Observed crash data that does not comply with the associated CPM model requirements may not be used in EB processing.

Table 37. Evaluation Highway - Homogeneous Segments (Section 5)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
75	Rural Multi-Lane Segment Four-lane Undivided	862+60.000	869+00.000	640.00	0.1212	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
76	Rural Multi-Lane Segment Four-lane Undivided	869+00.000	870+20.000	120.00	0.0227	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
77	Rural Multi-Lane Segment Four-lane Undivided	870+20.000	898+00.000	2,780.00	0.5265	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
78	Rural Multi-Lane Segment Four-lane Undivided	898+00.000	906+70.000	870.00	0.1648	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
79	Rural Multi-Lane Segment Four-lane Undivided	906+70.000	907+80.000	110.00	0.0208	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
80	Rural Multi-Lane Segment Four-lane Undivided	907+80.000	914+00.000	620.00	0.1174	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
81	Rural Multi-Lane Segment Four-lane Undivided	914+00.000	914+30.000	30.00	0.0057	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
82	Rural Multi-Lane Segment Four-lane Undivided	914+30.000	914+40.000	10.00	0.0019	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
83	Rural Multi-Lane Segment Four-lane Undivided	914+40.000	915+40.000	100.00	0.0189	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
84	Rural Multi-Lane Segment Four-lane Undivided	915+40.000	921+00.000	560.00	0.1061	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
85	Rural Multi-Lane Segment Four-lane Undivided	921+00.000	921+90.000	90.00	0.0170	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
86	Rural Multi-Lane Segment Four-lane Undivided	921+90.000	923+00.000	110.00	0.0208	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
87	Rural Multi-Lane Segment Four-lane Undivided	923+00.000	941+70.000	1,870.00	0.3542	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
88	Rural Multi-Lane Segment Four-lane Undivided	941+70.000	948+00.000	630.00	0.1193	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
89	Rural Multi-Lane Segment Four-lane Undivided	948+00.000	948+50.000	50.00	0.0095	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1

Table 38. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 5)

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
1	TWLTL	862+60.000	948+50.000	2025	2025	Total	0.6900

Table 39. Crash History Highway - Homogeneous Segments (Section 5)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
75	Rural Multi-Lane Segment Four-lane Undivided	862+60.000	869+00.000	640.00	0.1212	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
76	Rural Multi-Lane Segment Four-lane Undivided	869+00.000	870+20.000	120.00	0.0227	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
77	Rural Multi-Lane Segment Four-lane Undivided	870+20.000	898+00.000	2,780.00	0.5265	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
78	Rural Multi-Lane Segment Four-lane Undivided	898+00.000	906+70.000	870.00	0.1648	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
79	Rural Multi-Lane Segment Four-lane Undivided	906+70.000	907+80.000	110.00	0.0208	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
80	Rural Multi-Lane Segment Four-lane Undivided	907+80.000	914+00.000	620.00	0.1174	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
81	Rural Multi-Lane Segment Four-lane Undivided	914+00.000	914+30.000	30.00	0.0057	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
82	Rural Multi-Lane Segment Four-lane Undivided	914+30.000	914+40.000	10.00	0.0019	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
83	Rural Multi-Lane Segment Four-lane Undivided	914+40.000	915+40.000	100.00	0.0189	2018-2022: 4,900	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
84	Rural Multi-Lane Segment Four-lane Undivided	915+40.000	921+00.000	560.00	0.1061	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
85	Rural Multi-Lane Segment Four-lane Undivided	921+00.000	921+90.000	90.00	0.0170	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
86	Rural Multi-Lane Segment Four-lane Undivided	921+90.000	923+00.000	110.00	0.0208	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
87	Rural Multi-Lane Segment Four-lane Undivided	923+00.000	941+70.000	1,870.00	0.3542	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
88	Rural Multi-Lane Segment Four-lane Undivided	941+70.000	948+00.000	630.00	0.1193	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
89	Rural Multi-Lane Segment Four-lane Undivided	948+00.000	948+50.000	50.00	0.0095	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1

Table 40. Evaluation Intersection (Section 5)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
7	LaMesa/SD 38 (v1)	Rural Multi-Lane Intersection Four-Legged w/STOP control	915+00.000	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	2025: 1,266; 2026: 1,293; 2027: 1,320; 2028: 1,347; 2029: 1,375; 2030: 1,407; 2031: 1,439; 2032: 1,471; 2033: 1,504; 2034: 1,536; 2035: 1,568; 2036: 1,725; 2037: 1,949; 2038: 2,172; 2039: 2,396; 2040: 2,620; 2041: 2,940; 2042: 3,261; 2043: 3,581; 2044: 3,902; 2045: 4,222; 2046: 4,543; 2047: 4,863; 2048: 5,184; 2049: 5,504; 2050: 5,825	4	Stop-Controlled	0	0	0.00	0.00	false

Table 41. Crash History Intersection (Section 5)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
7	LaMesa/SD38 (v1)	Rural Multi-Lane Intersection Four-Legged w/STOP control	915+00.000	2018-2022: 4,900	2018-2022: 1,185	4	Stop-Controlled	0	0	0.00	0.00	false

Table 42. Expected Highway Crash Rates and Frequencies Summary (Section 5)

First Year of Analysis	**2025**
Last Year of Analysis	**2050**
Evaluated Length (mi)	**1.6269**
Average Future Road AADT (vpd)	**9,671**
Expected Crashes	
Total Crashes	**128.33**
Fatal and Injury Crashes	**70.35**
Fatal and Serious Injury Crashes	**43.02**
Property-Damage-Only Crashes	**57.98**
Percent of Total Expected Crashes	
Percent Fatal and Injury Crashes (%)	**55**
Percent Fatal and Serious Injury Crashes (%)	**34**
Percent Property-Damage-Only Crashes (%)	**45**
Expected Crash Rate	
Crash Rate (crashes/mi/yr)	**3.0339**
FI Crash Rate (crashes/mi/yr)	**1.6632**
FI no/C Crash Rate (crashes/mi/yr)	**1.0171**
PDO Crash Rate (crashes/mi/yr)	**1.3707**
Expected Travel Crash Rate	
Total Travel (million veh-mi)	**149.31**
Travel Crash Rate (crashes/million veh-mi)	**0.86**
Travel FI Crash Rate (crashes/million veh-mi)	**0.47**
Travel FI no/C Crash Rate (crashes/million veh-mi)	**0.29**
Travel PDO Crash Rate (crashes/million veh-mi)	**0.39**

Table 43. Expected Crash Frequencies and Rates by Highway Segment/Intersection (Section 5)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected FI no/C Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted FI no/C Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) FI no/C Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
75	862+60.000	869+00.000	0.1212	11.835	10.550	0.4552	0.1678	0.1025	0.2874	0.4058	0.2415	0.1305	0.1643	0.0494	-0.0737	-0.0279	0.1231	3.7553	0.97	
76	869+00.000	870+20.000	0.0227	0.872	1.978	0.0335	0.0200	0.0122	0.0135	0.0761	0.0453	0.0245	0.0308	-0.0425	-0.0252	-0.0122	-0.0173	1.4754	0.38	
77	870+20.000	898+00.000	0.5265	34.568	45.826	1.3295	0.9411	0.5751	0.3884	1.7625	1.0491	0.5667	0.7135	-0.4330	-0.1079	0.0085	-0.3251	2.5252	0.65	
78	898+00.000	906+70.000	0.1648	6.321	14.341	0.2431	0.1453	0.0888	0.0978	0.5516	0.3283	0.1773	0.2233	-0.3085	-0.1830	-0.0885	-0.1255	1.4754	0.38	
79	906+70.000	907+80.000	0.0208	0.799	1.813	0.0307	0.0184	0.0112	0.0124	0.0697	0.0415	0.0224	0.0282	-0.0390	-0.0231	-0.0112	-0.0159	1.4754	0.38	
80	907+80.000	914+00.000	0.1174	4.504	10.220	0.1732	0.1036	0.0633	0.0697	0.3931	0.2340	0.1264	0.1591	-0.2198	-0.1304	-0.0631	-0.0894	1.4754	0.38	
81	914+00.000	914+30.000	0.0057	0.162	0.368	0.0062	0.0037	0.0023	0.0025	0.0142	0.0086	0.0048	0.0056	-0.0079	-0.0049	-0.0026	-0.0030	1.0982	0.36	
82	914+30.000	914+40.000	0.0019	0.054	0.123	0.0021	0.0012	0.0008	0.0008	0.0047	0.0029	0.0016	0.0019	-0.0026	-0.0016	-0.0009	-0.0010	1.0982	0.36	
83	914+40.000	915+40.000	0.0189	0.579	1.443	0.0223	0.0132	0.0081	0.0090	0.0555	0.0337	0.0190	0.0218	-0.0332	-0.0205	-0.0109	-0.0127	1.1758	0.39	
LaMesa/SD38 (v1)	915+00.000			45.389	83.561	1.7457	0.7046	0.4318	1.0411	3.2139	1.8143	0.9753	1.3996	-1.4682	-1.1097	-0.5434	-0.3585			0.47
84	915+40.000	921+00.000	0.1061	3.028	6.871	0.1165	0.0696	0.0425	0.0468	0.2643	0.1607	0.0903	0.1036	-0.1478	-0.0910	-0.0478	-0.0568	1.0982	0.36	
85	921+00.000	921+90.000	0.0170	0.487	1.104	0.0187	0.0112	0.0068	0.0075	0.0425	0.0258	0.0145	0.0167	-0.0238	-0.0146	-0.0077	-0.0091	1.0982	0.36	
86	921+90.000	923+00.000	0.0208	0.595	1.350	0.0229	0.0137	0.0084	0.0092	0.0519	0.0316	0.0177	0.0204	-0.0290	-0.0179	-0.0094	-0.0111	1.0982	0.36	
87	923+00.000	941+70.000	0.3542	15.460	22.944	0.5946	0.4078	0.2492	0.1868	0.8825	0.5365	0.3016	0.3460	-0.2878	-0.1287	-0.0524	-0.1592	1.6789	0.56	
88	941+70.000	948+00.000	0.1193	3.407	7.730	0.1310	0.0783	0.0479	0.0527	0.2973	0.1807	0.1016	0.1166	-0.1663	-0.1024	-0.0537	-0.0639	1.0982	0.36	
89	948+00.000	948+50.000	0.0095	0.270	0.614	0.0104	0.0062	0.0038	0.0042	0.0236	0.0143	0.0081	0.0093	-0.0132	-0.0081	-0.0043	-0.0051	1.0982	0.36	
All Segments			1.6269	82.941	127.275	3.1901	2.0012	1.2229	1.1888	4.8952	2.9344	1.6070	1.9607	-1.7051	-0.9332	-0.3840	-0.7719	1.9608	0.56	
All Intersections				45.389	83.561	1.7457	0.7046	0.4318	1.0411	3.2139	1.8143	0.9753	1.3996	-1.4682	-1.1097	-0.5434	-0.3585			0.47
Total			1.6269	128.331	210.836	4.9358	2.7058	1.6548	2.2300	8.1091	4.7487	2.5822	3.3604	-3.1733	-2.0429	-0.9275	-1.1304	3.0339		

Table 44. Expected Crash Frequencies and Rates by Horizontal Design Element (Section 5)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected FI no/C Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted FI no/C Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) FI no/C Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)
Tangent	862+60.000	948+50.000	1.6269	82.941	127.275	3.1901	2.0012	1.2229	1.1888	4.8952	2.9344	1.6070	1.9607	-1.7051	-0.9332	-0.3840	-0.7719	1.9608	0.55

Table 45. Predicted Crash Frequencies by Year (Section 5)

Year	Total Crashes	FI Crashes	Percent FI (%)	FI/no C Crashes	Percent FI/no C (%)	PDO Crashes	Percent PDO (%)
2025	3.86	2.22	57.635	1.32	34.127	1.63	42.365
2026	5.19	3.03	58.409	1.77	34.162	2.16	41.591
2027	5.58	3.26	58.303	1.89	33.779	2.33	41.697
2028	5.99	3.48	58.200	2.00	33.421	2.50	41.800
2029	6.39	3.71	58.099	2.11	33.082	2.68	41.901
2030	6.53	3.79	58.080	2.15	32.973	2.74	41.920
2031	6.67	3.87	58.062	2.19	32.866	2.80	41.938
2032	6.81	3.95	58.044	2.23	32.760	2.86	41.956
2033	6.95	4.03	58.027	2.27	32.657	2.92	41.973
2034	7.09	4.11	58.010	2.31	32.557	2.98	41.990
2035	7.23	4.20	57.993	2.35	32.459	3.04	42.007
2036	7.46	4.33	58.041	2.41	32.316	3.13	41.959
2037	7.73	4.50	58.123	2.49	32.159	3.24	41.877
2038	8.00	4.66	58.206	2.56	32.012	3.34	41.794
2039	8.26	4.81	58.289	2.63	31.873	3.44	41.711
2040	8.52	4.97	58.371	2.70	31.741	3.54	41.629
2041	8.85	5.17	58.493	2.79	31.579	3.67	41.507
2042	9.17	5.37	58.611	2.88	31.428	3.79	41.389
2043	9.49	5.57	58.727	2.97	31.286	3.92	41.273
2044	9.80	5.77	58.839	3.05	31.151	4.03	41.161
2045	10.11	5.96	58.947	3.14	31.023	4.15	41.053
2046	10.42	6.16	59.053	3.22	30.901	4.27	40.947
2047	10.73	6.35	59.156	3.30	30.784	4.38	40.844
2048	11.03	6.54	59.255	3.38	30.672	4.50	40.745
2049	11.34	6.73	59.352	3.46	30.565	4.61	40.648
2050	11.64	6.92	59.446	3.54	30.462	4.72	40.554
Total	210.84	123.47	58.560	67.14	31.844	87.37	41.440
Average	8.11	4.75	58.560	2.58	31.844	3.36	41.440

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 46. Expected Crash Frequencies by Year (Section 5)

Year	Total Crashes	FI Crashes	Percent FI (%)	FI/no C Crashes	Percent FI/no C (%)	PDO Crashes	Percent PDO (%)
2025	2.35	1.27	53.954	0.84	35.929	1.08	46.189
2026	3.16	1.73	54.679	1.14	35.966	1.43	45.344
2027	3.40	1.85	54.580	1.21	35.563	1.54	45.459
2028	3.64	1.99	54.483	1.28	35.186	1.66	45.572
2029	3.89	2.12	54.389	1.35	34.829	1.78	45.683
2030	3.97	2.16	54.371	1.38	34.714	1.82	45.703
2031	4.06	2.21	54.354	1.40	34.601	1.86	45.723
2032	4.14	2.25	54.337	1.43	34.490	1.90	45.742
2033	4.23	2.30	54.321	1.46	34.382	1.94	45.761
2034	4.32	2.34	54.305	1.48	34.276	1.98	45.779
2035	4.40	2.39	54.290	1.50	34.173	2.02	45.797
2036	4.54	2.47	54.334	1.55	34.023	2.08	45.746
2037	4.71	2.56	54.411	1.59	33.857	2.15	45.656
2038	4.87	2.65	54.489	1.64	33.702	2.22	45.566
2039	5.03	2.74	54.566	1.69	33.556	2.29	45.475
2040	5.18	2.83	54.643	1.73	33.417	2.35	45.386
2041	5.38	2.95	54.757	1.79	33.247	2.44	45.253
2042	5.58	3.06	54.869	1.85	33.088	2.52	45.123
2043	5.77	3.17	54.976	1.90	32.938	2.60	44.998
2044	5.97	3.29	55.081	1.96	32.796	2.68	44.876
2045	6.16	3.40	55.183	2.01	32.661	2.75	44.757
2046	6.34	3.51	55.282	2.06	32.533	2.83	44.642
2047	6.53	3.62	55.378	2.12	32.410	2.91	44.531
2048	6.72	3.73	55.471	2.17	32.292	2.98	44.422
2049	6.90	3.83	55.562	2.22	32.179	3.06	44.316
2050	7.08	3.94	55.650	2.27	32.071	3.13	44.214
Total	128.33	70.35	54.821	43.02	33.526	57.98	45.179
Average	4.94	2.71	54.821	1.66	33.526	2.23	45.179

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 47. Comparing Predicted and Expected Crashes for the Evaluation Period (Section 5)

Scope	Total Crashes	FI Crashes	Percent FI (%)	FI/no C Crashes	Percent FI/no C (%)	PDO Crashes	Percent PDO (%)
Predicted	210.84	123.47	58.560	67.14	31.844	87.37	41.440
Expected	128.33	70.35	54.821	43.02	33.526	57.98	45.179
Expected - Predicted	-82.50	-53.12		-24.11		-29.39	
Percent Difference	-64.29	-75.50		-56.05		-50.69	

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 48. Expected Crash Type Distribution (Section 5)

Element Type	Crash Type	FI Crashes	Percent FI (%)	FI/no C Crashes	Percent FI/no C (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Single	12.38	9.7	9.67	7.5	7.33	5.7	19.74	15.4
Highway Segment	Total Single Vehicle Crashes	12.38	9.7	9.67	7.5	7.33	5.7	19.74	15.4
Highway Segment	Angle Collision	18.32	14.3	11.06	8.6	11.06	8.6	29.53	23.0
Highway Segment	Head-on Collision	1.51	1.2	1.37	1.1	0.03	0.0	0.75	0.6
Highway Segment	Rear-end Collision	15.87	12.4	6.90	5.4	6.80	5.3	20.40	15.9
Highway Segment	Sideswipe	2.50	1.9	1.40	1.1	3.71	2.9	8.13	6.3
Highway Segment	Total Multiple Vehicle Crashes	38.19	29.8	20.73	16.2	21.61	16.8	58.80	45.8
Highway Segment	Total Highway Segment Crashes	52.03	40.6	31.80	24.8	30.91	24.1	82.94	64.7
Highway Segment	Other Collision	1.46	1.1	1.40	1.1	1.98	1.5	4.40	3.4
Intersection	Single	2.71	2.1	2.23	1.7	6.58	5.1	9.17	7.1
Intersection	Total Single Vehicle Crashes	2.71	2.1	2.23	1.7	6.58	5.1	9.17	7.1
Intersection	Angle Collision	9.78	7.6	6.41	5.0	7.90	6.2	17.93	14.0
Intersection	Head-on Collision	0.33	0.3	0.26	0.2	0.41	0.3	0.73	0.6
Intersection	Rear-end Collision	3.90	3.0	1.21	0.9	6.50	5.1	10.35	8.1
Intersection	Sideswipe	0.77	0.6	0.45	0.3	4.22	3.3	4.86	3.8
Intersection	Total Multiple Vehicle Crashes	14.78	11.5	8.33	6.5	19.03	14.8	33.86	26.4
Intersection	Total Intersection Crashes	18.34	14.3	11.23	8.8	27.10	21.1	45.34	35.3
Intersection	Other Collision	0.84	0.7	0.66	0.5	1.49	1.2	2.31	1.8
	Total Crashes	70.37	54.9	43.02	33.5	58.01	45.2	128.28	100.0

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 49. Evaluation Message

Start Location (Sta. ft)	End Location (Sta. ft)	Message
862+60.000	869+00.000	Warning: for segment #75 (862+60.000 to 869+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
862+60.000	869+00.000	Warning: for segment #75 (862+60.000 to 869+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
869+00.000	870+20.000	Warning: for segment #76 (869+00.000 to 870+20.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
869+00.000	870+20.000	Warning: for segment #76 (869+00.000 to 870+20.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
870+20.000	898+00.000	Warning: for segment #77 (870+20.000 to 898+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
870+20.000	898+00.000	Warning: for segment #77 (870+20.000 to 898+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
898+00.000	906+70.000	Warning: for segment #78 (898+00.000 to 906+70.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
898+00.000	906+70.000	Warning: for segment #78 (898+00.000 to 906+70.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
906+70.000	907+80.000	Warning: for segment #79 (906+70.000 to 907+80.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
906+70.000	907+80.000	Warning: for segment #79 (906+70.000 to 907+80.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
907+80.000	914+00.000	Warning: for segment #80 (907+80.000 to 914+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
907+80.000	914+00.000	Warning: for segment #80 (907+80.000 to 914+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
914+00.000	914+30.000	Warning: for segment #81 (914+00.000 to 914+30.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
914+00.000	914+30.000	Warning: for segment #81 (914+00.000 to 914+30.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
914+30.000	914+40.000	Warning: for segment #82 (914+30.000 to 914+40.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
914+30.000	914+40.000	Warning: for segment #82 (914+30.000 to 914+40.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
914+40.000	915+40.000	Warning: for segment #83 (914+40.000 to 915+40.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
914+40.000	915+40.000	Warning: for segment #83 (914+40.000 to 915+40.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
915+40.000	921+00.000	Warning: for segment #84 (915+40.000 to 921+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
915+40.000	921+00.000	Warning: for segment #84 (915+40.000 to 921+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
921+00.000	921+90.000	Warning: for segment #85 (921+00.000 to 921+90.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
921+00.000	921+90.000	Warning: for segment #85 (921+00.000 to 921+90.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
921+90.000	923+00.000	Warning: for segment #86 (921+90.000 to 923+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
921+90.000	923+00.000	Warning: for segment #86 (921+90.000 to 923+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
923+00.000	941+70.000	Warning: for segment #87 (923+00.000 to 941+70.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
923+00.000	941+70.000	Warning: for segment #87 (923+00.000 to 941+70.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
941+70.000	948+00.000	Warning: for segment #88 (941+70.000 to 948+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
941+70.000	948+00.000	Warning: for segment #88 (941+70.000 to 948+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
948+00.000	948+50.000	Warning: for segment #89 (948+00.000 to 948+50.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
948+00.000	948+50.000	Warning: for segment #89 (948+00.000 to 948+50.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0

Start Location (Sta. ft)	End Location (Sta. ft)	Message
862+60.000	869+00.000	Warning: for segment #75 (862+60.000 to 869+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
862+60.000	869+00.000	Warning: for segment #75 (862+60.000 to 869+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
869+00.000	870+20.000	Warning: for segment #76 (869+00.000 to 870+20.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
869+00.000	870+20.000	Warning: for segment #76 (869+00.000 to 870+20.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
870+20.000	898+00.000	Warning: for segment #77 (870+20.000 to 898+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
870+20.000	898+00.000	Warning: for segment #77 (870+20.000 to 898+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
898+00.000	906+70.000	Warning: for segment #78 (898+00.000 to 906+70.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
898+00.000	906+70.000	Warning: for segment #78 (898+00.000 to 906+70.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
906+70.000	907+80.000	Warning: for segment #79 (906+70.000 to 907+80.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
906+70.000	907+80.000	Warning: for segment #79 (906+70.000 to 907+80.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
907+80.000	914+00.000	Warning: for segment #80 (907+80.000 to 914+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
907+80.000	914+00.000	Warning: for segment #80 (907+80.000 to 914+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
914+00.000	914+30.000	Warning: for segment #81 (914+00.000 to 914+30.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
914+00.000	914+30.000	Warning: for segment #81 (914+00.000 to 914+30.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
914+30.000	914+40.000	Warning: for segment #82 (914+30.000 to 914+40.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
914+30.000	914+40.000	Warning: for segment #82 (914+30.000 to 914+40.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
914+40.000	915+40.000	Warning: for segment #83 (914+40.000 to 915+40.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
914+40.000	915+40.000	Warning: for segment #83 (914+40.000 to 915+40.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
915+40.000	921+00.000	Warning: for segment #84 (915+40.000 to 921+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
915+40.000	921+00.000	Warning: for segment #84 (915+40.000 to 921+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
921+00.000	921+90.000	Warning: for segment #85 (921+00.000 to 921+90.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
921+00.000	921+90.000	Warning: for segment #85 (921+00.000 to 921+90.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
921+90.000	923+00.000	Warning: for segment #86 (921+90.000 to 923+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
921+90.000	923+00.000	Warning: for segment #86 (921+90.000 to 923+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
923+00.000	941+70.000	Warning: for segment #87 (923+00.000 to 941+70.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
923+00.000	941+70.000	Warning: for segment #87 (923+00.000 to 941+70.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
941+70.000	948+00.000	Warning: for segment #88 (941+70.000 to 948+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
941+70.000	948+00.000	Warning: for segment #88 (941+70.000 to 948+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
948+00.000	948+50.000	Warning: for segment #89 (948+00.000 to 948+50.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
948+00.000	948+50.000	Warning: for segment #89 (948+00.000 to 948+50.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0

Section 6 Evaluation

Section: Section 6
Evaluation Start Location: 948+50.000
Evaluation End Location: 974+11.000
Area Type: Urban
Functional Class: Arterial
Type of Alignment: Undivided, Multilane
Model Category: Urban/Suburban Arterial
Calibration Factor: 4D=1.0; 4SG=1.0; 4U=1.0;

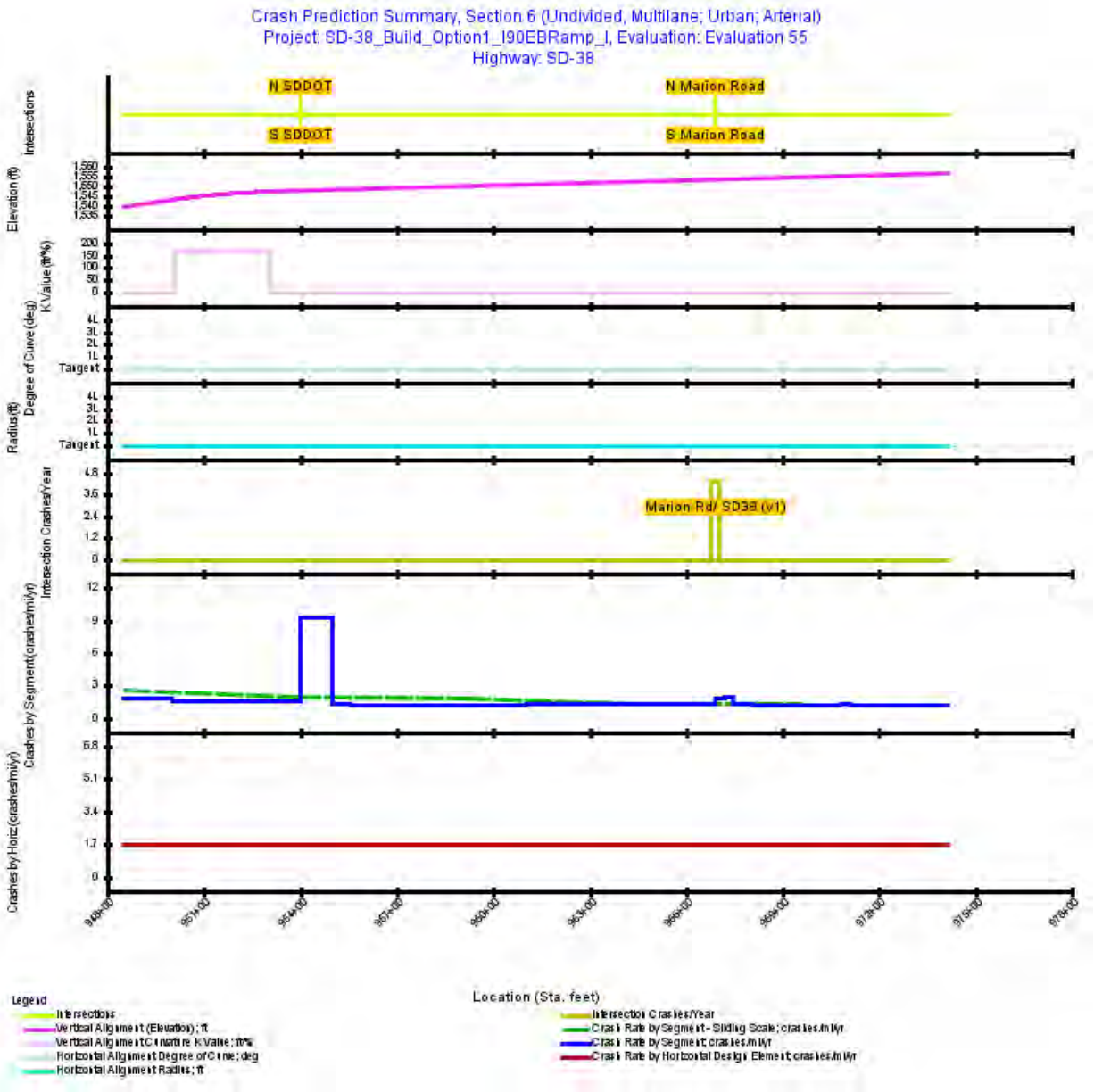

Figure 4. Crash Prediction Summary (Section 6)

Table 50. Observed Crashes Used in the Evaluation (Section 6)

Year	Observed Crashes	Total Crashes Used	FI Crashes	FI no/C Crashes	PDO Crashes
2018	5	5	4	0	1
2019	1	1	0	0	1
2020	2	2	0	0	2
2021	2	2	2	0	0
2022	2	2	0	0	2
All Years	12 [1]	12	6	0	6

Footnotes

[1] Note: Observed crash data that does not comply with the associated CPM model requirements may not be used in EB processing.

Table 51. Evaluation Highway - Homogeneous Segments (Section 6)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industial/Institutional	Number Minor Industial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
90	Urban/Suburban Arterial Segment Four-lane Undivided	948+50.000	950+00.000	150.00	0.0284	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/High	0	8.00	11.50
91	Urban/Suburban Arterial Segment Four-lane Undivided	950+00.000	954+00.000	400.00	0.0758	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/High	0	8.00	11.50
92	Urban/Suburban Arterial Segment Four-lane Undivided	954+00.000	955+00.000	100.00	0.0189	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	2	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/High	0	4.00	11.50
93	Urban/Suburban Arterial Segment Four-lane Divided	955+00.000	955+55.000	55.00	0.0104	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	4.01	Non-Traversable Median	4.01	Intermediate/High	0	8.00	11.50
94	Urban/Suburban Arterial Segment Four-lane Divided	955+55.000	958+28.000	273.00	0.0517	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	10.02	Non-Traversable Median	10.02	Intermediate/High	0	8.00	11.50
95	Urban/Suburban Arterial Segment Four-lane Divided	958+28.000	961+01.000	273.00	0.0517	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	20.03	Non-Traversable Median	19.99	Intermediate/High	0	8.00	11.50
96	Urban/Suburban Arterial Segment Four-lane Divided	961+01.000	962+00.000	99.00	0.0187	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	23.12	Traversable Median	23.12	Intermediate/High	0	8.00	11.50
97	Urban/Suburban Arterial Segment Four-lane Divided	962+00.000	963+69.000	169.00	0.0320	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	18.13	Traversable Median	30.13	Intermediate/High	0	8.00	11.50
98	Urban/Suburban Arterial Segment Four-lane Divided	963+69.000	965+00.000	131.00	0.0248	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	12.55	Traversable Median	24.55	Intermediate/High	0	8.00	11.50
99	Urban/Suburban Arterial Segment Four-lane Divided	965+00.000	966+38.000	138.00	0.0261	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	7.54	Traversable Median	19.54	Intermediate/High	0	4.00	11.50
100	Urban/Suburban Arterial Segment Four-lane Divided	966+38.000	966+70.000	32.00	0.0061	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	4.38	Traversable Median	16.38	Intermediate/High	0	4.00	11.50

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industial/Institutional	Number Minor Industial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
101	Urban/Suburban Arterial Segment Four-lane Divided	966+70.000	966+91.000	21.00	0.0040	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	3.39	Traversable Median	15.39	Intermediate/High	0	0.00	11.50
102	Urban/Suburban Arterial Segment Four-lane Undivided	966+91.000	967+14.000	23.00	0.0044	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	true	false	0.0	0.00	None	0.00	Intermediate/High	0	0.00	11.50
103	Urban/Suburban Arterial Segment Four-lane Undivided	967+14.000	967+20.000	6.00	0.0011	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	true	false	0.0	0.00	None	0.00	Intermediate/High	0	8.00	11.50
104	Urban/Suburban Arterial Segment Four-lane Undivided	967+20.000	967+45.000	25.00	0.0047	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/High	0	8.00	11.50
105	Urban/Suburban Arterial Segment Four-lane Divided	967+45.000	968+06.000	61.00	0.0116	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	4.01	Non-Traversable Median	18.01	Intermediate/High	0	8.00	11.50
106	Urban/Suburban Arterial Segment Four-lane Divided	968+06.000	970+79.000	273.00	0.0517	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	9.52	Non-Traversable Median	23.52	Intermediate/High	0	8.00	11.50
107	Urban/Suburban Arterial Segment Four-lane Divided	970+79.000	971+09.000	30.00	0.0057	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	14.53	Non-Traversable Median	14.53	Intermediate/High	0	8.00	11.50
108	Urban/Suburban Arterial Segment Four-lane Divided	971+09.000	974+11.000	302.00	0.0572	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	20.01	Non-Traversable Median	20.01	Intermediate/High	0	8.00	11.50

Table 52. Crash Highway Highway - Homogeneous Segments (Section 6)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industial/Institutional	Number Minor Industial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
90	Urban/Suburban Arterial Segment Four-lane Undivided	948+50.000	950+00.000	150.00	0.0284	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/ High	0	8.00	11.50
91	Urban/Suburban Arterial Segment Four-lane Undivided	950+00.000	954+00.000	400.00	0.0758	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/ High	0	8.00	11.50
92	Urban/Suburban Arterial Segment Four-lane Undivided	954+00.000	955+00.000	100.00	0.0189	2018-2022: 4,900	0	0	2	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/ High	0	4.00	11.50
93	Urban/Suburban Arterial Segment Four-lane Divided	955+00.000	955+55.000	55.00	0.0104	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	4.01	Non-Traversable Median	4.01	Intermediate/ High	0	8.00	11.50
94	Urban/Suburban Arterial Segment Four-lane Divided	955+55.000	958+28.000	273.00	0.0517	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	10.02	Non-Traversable Median	10.02	Intermediate/ High	0	8.00	11.50
95	Urban/Suburban Arterial Segment Four-lane Divided	958+28.000	961+01.000	273.00	0.0517	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	20.03	Non-Traversable Median	19.99	Intermediate/ High	0	8.00	11.50
96	Urban/Suburban Arterial Segment Four-lane Divided	961+01.000	962+00.000	99.00	0.0187	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	23.12	Traversable Median	23.12	Intermediate/ High	0	8.00	11.50
97	Urban/Suburban Arterial Segment Four-lane Divided	962+00.000	963+69.000	169.00	0.0320	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	18.13	Traversable Median	30.13	Intermediate/ High	0	8.00	11.50
98	Urban/Suburban Arterial Segment Four-lane Divided	963+69.000	965+00.000	131.00	0.0248	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	12.55	Traversable Median	24.55	Intermediate/ High	0	8.00	11.50
99	Urban/Suburban Arterial Segment Four-lane Divided	965+00.000	966+38.000	138.00	0.0261	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	7.54	Traversable Median	19.54	Intermediate/ High	0	4.00	11.50
100	Urban/Suburban Arterial Segment Four-lane Divided	966+38.000	966+70.000	32.00	0.0061	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	4.38	Traversable Median	16.38	Intermediate/ High	0	4.00	11.50
101	Urban/Suburban Arterial Segment Four-lane Divided	966+70.000	966+91.000	21.00	0.0040	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	3.39	Traversable Median	15.39	Intermediate/ High	0	0.00	11.50
102	Urban/Suburban Arterial Segment Four-lane Undivided	966+91.000	967+14.000	23.00	0.0044	2018-2022: 4,900	0	0	0	0	0	0	0	true	false	0.0	0.00	None	0.00	Intermediate/ High	0	0.00	11.50
103	Urban/Suburban Arterial Segment Four-lane Undivided	967+14.000	967+20.000	6.00	0.0011	2018-2022: 4,900	0	0	0	0	0	0	0	true	false	0.0	0.00	None	0.00	Intermediate/ High	0	8.00	11.50
104	Urban/Suburban Arterial Segment Four-lane Undivided	967+20.000	967+45.000	25.00	0.0047	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/ High	0	8.00	11.50
105	Urban/Suburban Arterial Segment Four-lane Divided	967+45.000	968+06.000	61.00	0.0116	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	4.01	Non-Traversable Median	18.01	Intermediate/ High	0	8.00	11.50
106	Urban/Suburban Arterial Segment Four-lane Divided	968+06.000	970+79.000	273.00	0.0517	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	9.52	Non-Traversable Median	23.52	Intermediate/ High	0	8.00	11.50
107	Urban/Suburban Arterial Segment Four-lane Divided	970+79.000	971+09.000	30.00	0.0057	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	14.53	Non-Traversable Median	14.53	Intermediate/ High	0	8.00	11.50
108	Urban/Suburban Arterial Segment Four-lane Divided	971+09.000	974+11.000	302.00	0.0572	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	20.01	Non-Traversable Median	20.01	Intermediate/ High	0	8.00	11.50

Table 53. Evaluation Intersection (Section 6)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/ day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
8	Marion Rd/ SD38 (v1)	Urban/Suburban Arterial Intersection Four-Legged Signalized	966+91.000	2025: 5,766; 2026: 5,888; 2027: 6,010; 2028: 6,132; 2029: 6,255; 2030: 6,660; 2031: 7,065; 2032: 7,470; 2033: 7,875; 2034: 8,280; 2035: 8,685; 2036: 9,090; 2037: 9,495; 2038: 9,900; 2039: 10,305; 2040: 10,710; 2041: 11,861; 2042: 13,012; 2043: 14,163; 2044: 15,314; 2045: 16,465; 2046: 17,616; 2047: 18,767; 2048: 19,918; 2049: 21,069; 2050: 22,220	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	4	Signalized	4	3	0	20	false	false	false	0	0	6

Table 54. Crash History Intersection (Section 6)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
8	Marion Rd/ SD38 (v1)	Urban/Suburban Arterial Intersection Four-Legged Signalized	966+91.000	2018-2022: 5,400	2018-2022: 4,900	4	Signalized	4	3	0	20	false	false	false	0	0	6

Table 55. Expected Highway Crash Rates and Frequencies Summary (Section 6)

First Year of Analysis	**2025**
Last Year of Analysis	**2050**
Evaluated Length (mi)	**0.4850**
Average Future Road AADT (vpd)	**8,272**
Expected Crashes	
Total Crashes	**135.85**
Fatal and Injury Crashes	**46.51**
Property-Damage-Only Crashes	**89.34**
Percent of Total Expected Crashes	
Percent Fatal and Injury Crashes (%)	**34**
Percent Property-Damage-Only Crashes (%)	**66**
Expected Crash Rate	
Crash Rate (crashes/mi/yr)	**10.7725**
FI Crash Rate (crashes/mi/yr)	**3.6878**
PDO Crash Rate (crashes/mi/yr)	**7.0847**
Expected Travel Crash Rate	
Total Travel (million veh-mi)	**38.08**
Travel Crash Rate (crashes/million veh-mi)	**3.57**
Travel FI Crash Rate (crashes/million veh-mi)	**1.22**
Travel PDO Crash Rate (crashes/million veh-mi)	**2.35**

Table 56. Expected Crash Frequencies and Rates by Highway Segment/Intersection (Section 6)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
90	948+50.000	950+00.000	0.0284	1.343	1.459	0.0517	0.0179	0.0337	0.0561	0.0181	0.0380	-0.0044	-0.0001	-0.0043	1.8184	0.60	
91	950+00.000	954+00.000	0.0758	3.172	3.889	0.1220	0.0437	0.0783	0.1496	0.0481	0.1014	-0.0276	-0.0044	-0.0232	1.6103	0.53	
92	954+00.000	955+00.000	0.0189	4.560	6.162	0.1754	0.0651	0.1103	0.2370	0.0817	0.1553	-0.0616	-0.0167	-0.0449	9.2608	3.07	
93	955+00.000	955+55.000	0.0104	0.373	0.382	0.0143	0.0039	0.0104	0.0147	0.0039	0.0108	-0.0004	-0.0000	-0.0003	1.3757	0.46	
94	955+55.000	958+28.000	0.0517	1.685	1.897	0.0648	0.0182	0.0466	0.0730	0.0195	0.0535	-0.0082	-0.0013	-0.0069	1.2532	0.42	
95	958+28.000	961+01.000	0.0517	1.685	1.897	0.0648	0.0182	0.0466	0.0730	0.0195	0.0535	-0.0082	-0.0013	-0.0069	1.2532	0.42	
96	961+01.000	962+00.000	0.0187	0.651	0.681	0.0251	0.0069	0.0182	0.0262	0.0070	0.0192	-0.0011	-0.0001	-0.0010	1.3360	0.44	
97	962+00.000	963+69.000	0.0320	1.069	1.151	0.0411	0.0114	0.0297	0.0443	0.0118	0.0325	-0.0032	-0.0004	-0.0027	1.2842	0.42	
98	963+69.000	965+00.000	0.0248	0.850	0.901	0.0327	0.0090	0.0237	0.0347	0.0092	0.0254	-0.0020	-0.0002	-0.0017	1.3176	0.44	
99	965+00.000	966+38.000	0.0261	0.893	0.949	0.0343	0.0095	0.0249	0.0365	0.0097	0.0268	-0.0022	-0.0003	-0.0019	1.3136	0.43	
100	966+38.000	966+70.000	0.0061	0.217	0.220	0.0083	0.0023	0.0061	0.0085	0.0023	0.0062	-0.0001	0.0000	-0.0001	1.3765	0.46	
101	966+70.000	966+91.000	0.0040	0.143	0.144	0.0055	0.0015	0.0040	0.0056	0.0015	0.0041	-0.0001	0.0000	-0.0001	1.3834	0.46	
Marion Rd/ SD38 (v1)	966+91.000			114.572	49.969	4.4066	1.5303	2.8763	1.9219	0.6310	1.2909	2.4847	0.8993	1.5854			0.65
102	966+91.000	967+14.000	0.0044	0.203	0.205	0.0078	0.0027	0.0051	0.0079	0.0025	0.0054	-0.0001	0.0001	-0.0002	1.7894	0.59	
103	967+14.000	967+20.000	0.0011	0.053	0.053	0.0021	0.0007	0.0014	0.0021	0.0007	0.0014	-0.0000	0.0000	-0.0000	1.8054	0.60	
104	967+20.000	967+45.000	0.0047	0.240	0.243	0.0092	0.0031	0.0061	0.0093	0.0030	0.0063	-0.0001	0.0001	-0.0003	1.9466	0.65	
105	967+45.000	968+06.000	0.0116	0.412	0.424	0.0159	0.0043	0.0115	0.0163	0.0043	0.0120	-0.0005	-0.0000	-0.0004	1.3720	0.45	
106	968+06.000	970+79.000	0.0517	1.685	1.897	0.0648	0.0182	0.0466	0.0730	0.0195	0.0535	-0.0082	-0.0013	-0.0069	1.2532	0.42	
107	970+79.000	971+09.000	0.0057	0.206	0.208	0.0079	0.0021	0.0058	0.0080	0.0021	0.0059	-0.0001	0.0000	-0.0001	1.3915	0.46	
108	971+09.000	974+11.000	0.0572	1.842	2.098	0.0708	0.0199	0.0509	0.0807	0.0215	0.0592	-0.0099	-0.0016	-0.0083	1.2387	0.41	
All Segments			0.4850	21.280	24.862	0.8185	0.2585	0.5600	0.9562	0.2860	0.6702	-0.1378	-0.0275	-0.1102	1.6874	0.56	
All Intersections				114.572	49.969	4.4066	1.5303	2.8763	1.9219	0.6310	1.2909	2.4847	0.8993	1.5854			0.65
Total			0.4850	135.852	74.831	5.2251	1.7887	3.4363	2.8781	0.9170	1.9611	2.3470	0.8718	1.4752	10.7725		

Table 57. Expected Crash Frequencies and Rates by Horizontal Design Element (Section 6)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)
Tangent	948+50.000	974+11.000	0.4850	21.280	24.862	0.8185	0.2585	0.5600	0.9562	0.2860	0.6702	-0.1378	-0.0275	-0.1102	1.6874	0.56

Table 58. Predicted Crash Frequencies by Year (Section 6)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2025	1.54	0.47	30.768	1.07	69.232
2026	1.62	0.50	30.791	1.12	69.209
2027	1.69	0.52	30.812	1.17	69.188
2028	1.77	0.55	30.830	1.22	69.170
2029	1.85	0.57	30.847	1.28	69.153
2030	1.93	0.60	30.902	1.33	69.098
2031	2.01	0.62	30.960	1.39	69.040
2032	2.10	0.65	31.018	1.45	68.982
2033	2.18	0.68	31.078	1.50	68.922
2034	2.27	0.71	31.139	1.56	68.862
2035	2.35	0.73	31.199	1.62	68.801
2036	2.44	0.76	31.260	1.68	68.740
2037	2.53	0.79	31.321	1.74	68.679
2038	2.61	0.82	31.381	1.79	68.618
2039	2.70	0.85	31.442	1.85	68.558
2040	2.79	0.88	31.502	1.91	68.498
2041	3.01	0.95	31.680	2.06	68.320
2042	3.24	1.03	31.854	2.21	68.146
2043	3.46	1.11	32.026	2.35	67.975
2044	3.69	1.19	32.192	2.50	67.808
2045	3.92	1.27	32.354	2.65	67.646
2046	4.15	1.35	32.511	2.80	67.489
2047	4.39	1.43	32.664	2.95	67.336
2048	4.62	1.52	32.811	3.11	67.189
2049	4.86	1.60	32.954	3.26	67.046
2050	5.10	1.69	33.093	3.41	66.907
Total	74.83	23.84	31.860	50.99	68.140
Average	2.88	0.92	31.860	1.96	68.140

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 59. Expected Crash Frequencies by Year (Section 6)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2025	2.80	0.93	33.060	1.87	66.820
2026	2.94	0.97	33.085	1.96	66.798
2027	3.07	1.02	33.107	2.05	66.778
2028	3.21	1.06	33.127	2.15	66.760
2029	3.35	1.11	33.145	2.24	66.744
2030	3.50	1.16	33.205	2.34	66.691
2031	3.65	1.22	33.266	2.44	66.635
2032	3.81	1.27	33.329	2.54	66.579
2033	3.96	1.32	33.394	2.63	66.521
2034	4.12	1.38	33.458	2.74	66.463
2035	4.27	1.43	33.524	2.84	66.404
2036	4.43	1.49	33.589	2.94	66.346
2037	4.59	1.54	33.654	3.04	66.287
2038	4.75	1.60	33.719	3.14	66.228
2039	4.91	1.66	33.784	3.25	66.170
2040	5.07	1.72	33.849	3.35	66.112
2041	5.47	1.86	34.040	3.61	65.941
2042	5.88	2.01	34.228	3.86	65.772
2043	6.29	2.16	34.411	4.12	65.607
2044	6.70	2.32	34.590	4.38	65.446
2045	7.12	2.47	34.765	4.65	65.289
2046	7.54	2.63	34.934	4.91	65.138
2047	7.96	2.79	35.097	5.18	64.991
2048	8.39	2.96	35.256	5.44	64.848
2049	8.82	3.12	35.409	5.71	64.710
2050	9.26	3.29	35.558	5.98	64.577
Total	135.85	46.51	34.234	89.34	65.766
Average	5.22	1.79	34.234	3.44	65.766

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 60. Comparing Predicted and Expected Crashes for the Evaluation Period (Section 6)

Scope	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
Predicted	74.83	23.84	31.860	50.99	68.140
Expected	135.85	46.51	34.234	89.34	65.766
Expected - Predicted	61.02	22.67		38.35	
Percent Difference	44.92	48.74		42.93	

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 61. Expected Five Lane or Fewer Crash Type Distribution (Section 6)

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.21	0.2	0.21	0.2
Highway Segment	Collision with Bicycle	0.09	0.1	0.00	0.0	0.09	0.1
Highway Segment	Collision with Fixed Object	0.57	0.4	3.57	2.6	4.14	3.0
Highway Segment	Collision with Other Object	0.03	0.0	0.09	0.1	0.11	0.1
Highway Segment	Other Single-vehicle Collision	0.43	0.3	0.53	0.4	0.97	0.7
Highway Segment	Collision with Pedestrian	0.34	0.3	0.00	0.0	0.34	0.3
Highway Segment	Total Single Vehicle Crashes	1.47	1.1	4.39	3.2	5.86	4.3
Highway Segment	Angle Collision	0.37	0.3	0.54	0.4	0.91	0.7
Highway Segment	Driveway-related Collision	1.32	1.0	2.27	1.7	3.58	2.6
Highway Segment	Head-on Collision	0.17	0.1	0.05	0.0	0.21	0.2
Highway Segment	Other Multi-vehicle Collision	0.20	0.1	0.58	0.4	0.79	0.6
Highway Segment	Rear-end Collision	2.79	2.1	4.80	3.5	7.59	5.6
Highway Segment	Sideswipe, Opposite Direction Collision	0.15	0.1	0.09	0.1	0.24	0.2
Highway Segment	Sideswipe, Same Direction Collision	0.26	0.2	1.83	1.3	2.09	1.5
Highway Segment	Total Multiple Vehicle Crashes	5.25	3.9	10.16	7.5	15.42	11.3
Highway Segment	Total Highway Segment Crashes	6.72	4.9	14.56	10.7	21.28	15.7
Intersection	Collision with Animal	0.00	0.0	0.00	0.0	0.01	0.0
Intersection	Collision with Bicycle	0.73	0.5	0.00	0.0	0.73	0.5
Intersection	Collision with Fixed Object	0.90	0.7	1.71	1.3	2.61	1.9
Intersection	Non-Collision	0.17	0.1	0.07	0.0	0.24	0.2
Intersection	Collision with Other Object	0.09	0.1	0.14	0.1	0.23	0.2
Intersection	Other Single-vehicle Collision	0.05	0.0	0.04	0.0	0.09	0.1
Intersection	Collision with Parked Vehicle	0.00	0.0	0.00	0.0	0.00	0.0
Intersection	Collision with Pedestrian	0.44	0.3	0.00	0.0	0.44	0.3
Intersection	Total Intersection Single Vehicle Crashes	2.38	1.7	1.97	1.4	4.34	3.2
Intersection	Angle Collision	12.98	9.6	17.77	13.1	30.75	22.6
Intersection	Head-on Collision	1.83	1.3	2.18	1.6	4.02	3.0
Intersection	Other Multi-vehicle Collision	2.06	1.5	15.36	11.3	17.42	12.8
Intersection	Rear-end Collision	16.84	12.4	35.17	25.9	52.01	38.3
Intersection	Sideswipe	3.70	2.7	2.33	1.7	6.03	4.4
Intersection	Total Intersection Multiple Vehicle Crashes	37.41	27.5	72.82	53.6	110.23	81.1
Intersection	Total Intersection Crashes	39.79	29.3	74.78	55.0	114.57	84.3
	Total Crashes	46.51	34.2	89.34	65.8	135.85	100.0

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Interactive Highway Safety Design Model

Crash Prediction Evaluation Report

June 10, 2024

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Report Overview

Report Generated: Jun 10, 2024 9:10 AM
Report Template: System: Single Page, 508 Compliant [System] (mlcpm5, Dec 5, 2019 2:16 PM)

Evaluation Date: Mon Jun 10 09:08:16 CDT 2024
IHSDM Version: v17.0.0 (Sep 22, 2021)
Crash Prediction Module: v12.0.0 (Sep 22, 2021)

User Name: naveen.mallipaddi
Organization Name:
Phone:
E-Mail:

Project Title: SD-38_Build_Option2_I90EBRamp_I
Project Comment: Created Mon Mar 27 16:47:43 CDT 2023
Project Unit System: U.S. Customary

Highway Title: SD-38
Highway Comment: Created Mon Mar 27 16:49:47 CDT 2023
Highway Version: 20

Evaluation Title: Evaluation 53
Evaluation Comment: Created Mon Jun 10 09:07:26 CDT 2024

Minimum Location: 171+44.000
Maximum Location: 580+10.000

Policy for Superelevation: AASHTO 2011 U.S. Customary
Calibration: HSM Configuration
Crash Distribution: HSM Configuration
Model/CMF: HSM Configuration

First Year of Analysis: 2025
Last Year of Analysis: 2050
Empirical-Bayes Analysis: Site-Specific
Highway with Crash History: SD-38
Highway with Crash History Comment: Created Mon Mar 27 16:49:47 CDT 2023
Highway with Crash History Version: 20
First Year of Observed Crashes: 2018
Last Year of Observed Crashes: 2022

Disclaimer Regarding Crash Prediction Method

IMPORTANT NOTICE ABOUT COMPARING RESULTS FROM HIGHWAY SAFETY MANUAL FIRST EDITION (2010) MODELS TO RESULTS FROM NEW MODELS DEVELOPED UNDER NCHRP PROJECTS 17-70, 17-58, AND 17-68

Since the publication of the Highway Safety Manual - First Edition (HSM-1), in 2010 by the American Association of State Highway and Transportation Officials (AASHTO), multiple research efforts have been undertaken through the National Cooperative Highway Research Program (NCHRP) to develop safety performance models for road segment and intersection facility types that were not initially reflected in the HSM-1, in order to expand the breadth and depth of the HSM in the future.

The IHSDM Crash Prediction Module (CPM) is intended as a faithful implementation of HSM Part C predictive methods. As NCHRP projects to develop new predictive methods for the HSM are completed, FHWA works to incorporate the new methods into IHSDM, sometimes in advance of publication in the HSM. The following new crash predictive methods have been accepted by NCHRP project panels and incorporated into IHSDM, while pending AASHTO's approval for incorporation into a future edition of the HSM:

- Roundabouts: completed in 2018 under NCHRP Project 17-70, the new methods will provide improved outcomes for the safety analysis of roundabouts.
- 6+ lane and one-way urban/suburban arterials (including models for segments and intersections): completed under NCHRP Project 17-58.
- Intersection crash prediction methods for some intersection configurations and traffic control types not currently addressed in the HSM (e.g., all-way stop; rural 3-leg signalized; 3-leg stop-controlled where the major leg turns; urban 5-leg signalized; urban high-speed intersections): completed in 2021 under NCHRP Project 17-68.

However, in the absence of local calibration factors (see HSM-1 Part C, Appendix A for guidance on calibration of the predictive models), it is neither appropriate nor advisable to directly compare the results from new models (from NCHRP Projects 17-58, 17-68, and 17-70) to results from HSM-1 models, as the models were not calibrated to the same base state data sets, and consequently can produce unexpected results. If local calibration factors are available and applied to both new models and HSM-1 models, then it may be appropriate to directly compare the results.*[Note: Work being performed under NCHRP Project 17-72 (Update of Crash Modification Factors for the Highway Safety Manual) is expected to re-calibrate many of the old (HSM-1) and new (e.g., NCHRP 17-70) models to data from a single (or small number of) states, that would allow results from all models to be directly compared.]*

The models produced for NCHRP Project 17-70 have independent value in terms of informing the design of a roundabout and assessing the effects of different design characteristics on the expected safety performance of a roundabout.

The HSM-1 interim method previously included in IHSDM for evaluating roundabouts on urban/suburban arterials (i.e., evaluating an existing intersection and then applying a Crash Modification Factor for replacing the existing intersection with a roundabout) has been deactivated in IHSDM, to minimize any confusion with the new roundabout methodology.

Section Types

Section 1 Evaluation

Section: Section 1
Evaluation Start Location: 171+44.000
Evaluation End Location: 580+10.000
Area Type: Rural
Functional Class: Arterial
Type of Alignment: Undivided, Two Lane
Model Category: Rural, Two Lane
Calibration Factor: 2U=1.0; 3ST=1.0; 4ST=1.0;

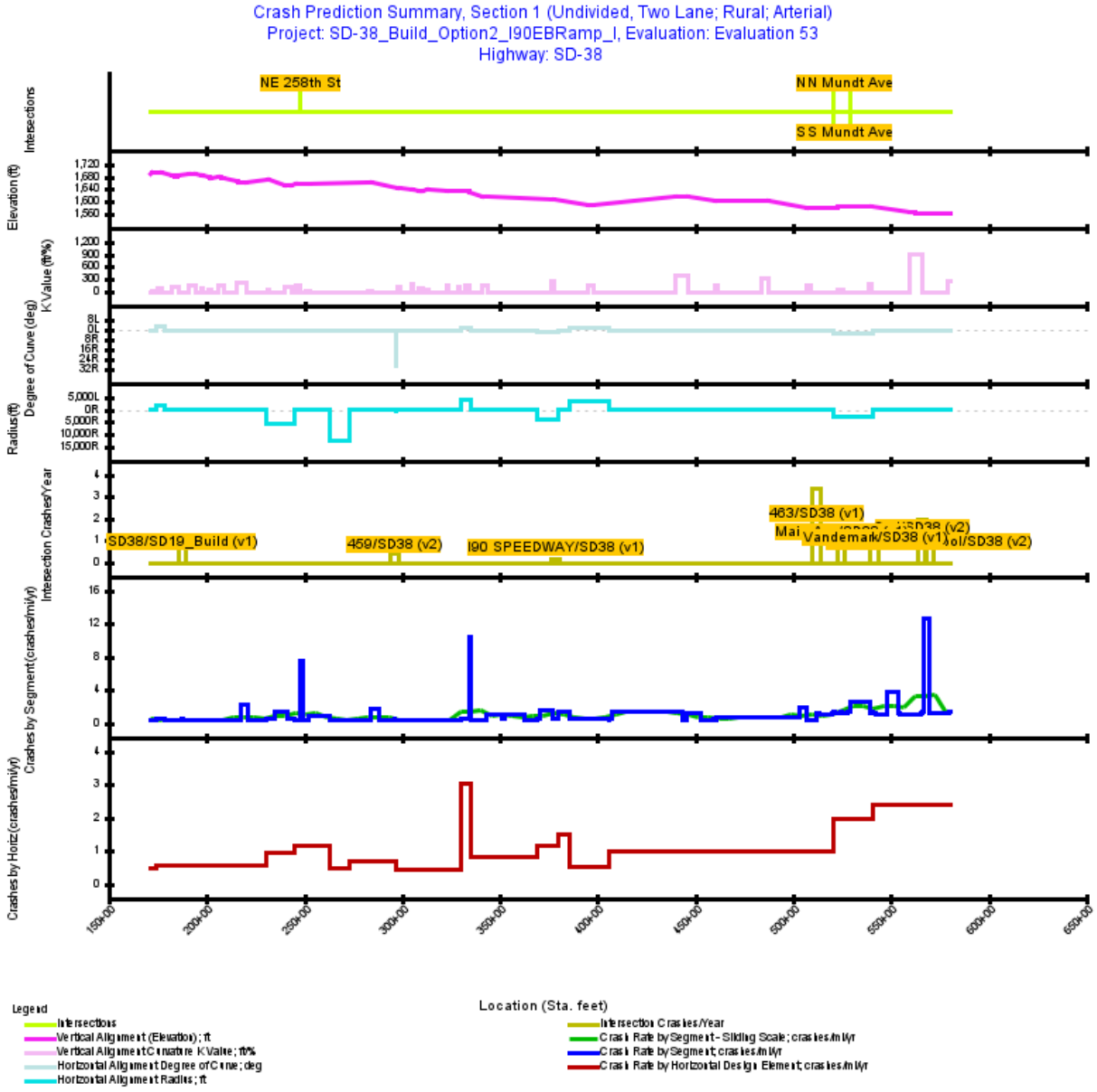

Figure 1. Crash Prediction Summary (Section 1)

Table 1. Observed Crashes Used in the Evaluation (Section 1)

Year	Observed Crashes	Total Crashes Used	FI Crashes	FI no/C Crashes	PDO Crashes
2018	9	9	2	1	7
2019	5	4	1	0	3
2020	9	9	5	1	4
2021	8	7	3	1	4
2022	6	6	3	1	3
All Years	37 [1]	35	14	4	21

Footnotes

[1] Note: Observed crash data that does not comply with the associated CPM model requirements may not be used in EB processing.

Table 2. Evaluation Highway - Homogeneous Segments (Section 1)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
1	Rural Two-Lane Segment Two-lane Undivided	171+44.000	172+42.000	98.00	0.0186	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	4.25	6.2	3	false	0	false	false	false				
2	Rural Two-Lane Segment Two-lane Undivided	172+42.000	174+52.690	210.69	0.0399	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.17	6.2	3	false	0	false	false	false				
3	Rural Two-Lane Segment Two-lane Undivided	174+52.690	176+25.000	172.31	0.0326	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.17	6.2	3	false	0	false	false	false	2,074.80	2.0	true	40
4	Rural Two-Lane Segment Two-lane Undivided	176+25.000	178+85.250	260.25	0.0493	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.88	6.2	3	false	0	false	false	false	2,074.80	2.0	true	40
5	Rural Two-Lane Segment Two-lane Undivided	178+85.250	183+75.370	490.12	0.0928	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.88	6.2	3	false	0	false	false	false				
6	Rural Two-Lane Segment Two-lane Undivided	183+75.370	184+00.000	24.63	0.0047	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
7	Rural Two-Lane Segment Two-lane Undivided	184+00.000	184+45.000	45.00	0.0085	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
8	Rural Two-Lane Segment Two-lane Undivided	184+45.000	185+20.000	75.00	0.0142	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
9	Rural Two-Lane Segment Two-lane Undivided	185+20.000	186+60.000	140.00	0.0265	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
10	Rural Two-Lane Segment Two-lane Undivided	186+60.000	187+20.000	60.00	0.0114	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
11	Rural Two-Lane Segment Two-lane Undivided	187+20.000	187+60.000	40.00	0.0076	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	0.00	1.13	6.2	3	false	0	false	false	false				
12	Rural Two-Lane Segment Two-lane Undivided	187+60.000	190+00.000	240.00	0.0455	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
13	Rural Two-Lane Segment Two-lane Undivided	190+00.000	192+00.000	200.00	0.0379	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
14	Rural Two-Lane Segment Two-lane Undivided	192+00.000	192+39.270	39.27	0.0074	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
15	Rural Two-Lane Segment Two-lane Undivided	192+39.270	193+60.000	120.73	0.0229	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.94	6.2	3	false	0	false	false	false				
16	Rural Two-Lane Segment Two-lane Undivided	193+60.000	197+65.000	405.00	0.0767	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.94	6.2	3	false	0	false	false	false				
17	Rural Two-Lane Segment Two-lane Undivided	197+65.000	199+00.000	135.00	0.0256	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.94	6.2	3	false	0	false	false	false				
18	Rural Two-Lane Segment Two-lane Undivided	199+00.000	201+63.750	263.75	0.0500	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.94	6.2	3	false	0	false	false	false				
19	Rural Two-Lane Segment Two-lane Undivided	201+63.750	202+00.000	36.25	0.0069	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.13	6.2	3	false	0	false	false	false				
20	Rural Two-Lane Segment Two-lane Undivided	202+00.000	207+00.000	500.00	0.0947	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.13	6.2	3	false	0	false	false	false				
21	Rural Two-Lane Segment Two-lane Undivided	207+00.000	207+49.760	49.76	0.0094	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.13	6.2	3	false	0	false	false	false				
22	Rural Two-Lane Segment Two-lane Undivided	207+49.760	217+74.250	1,024.49	0.1940	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.70	6.2	3	false	0	false	false	false				
23	Rural Two-Lane Segment Two-lane Undivided	217+74.250	221+00.000	325.75	0.0617	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false				
24	Rural Two-Lane Segment Two-lane Undivided	221+00.000	226+00.000	500.00	0.0947	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false				
25	Rural Two-Lane Segment Two-lane Undivided	226+00.000	230+66.250	466.25	0.0883	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false				
26	Rural Two-Lane Segment Two-lane Undivided	230+66.250	231+39.700	73.45	0.0139	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
27	Rural Two-Lane Segment Two-lane Undivided	231+39.700	235+00.000	360.30	0.0682	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-2.00	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
28	Rural Two-Lane Segment Two-lane Undivided	235+00.000	241+61.390	661.39	0.1253	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-2.00	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
29	Rural Two-Lane Segment Two-lane Undivided	241+61.390	242+00.000	38.61	0.0073	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.16	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
30	Rural Two-Lane Segment Two-lane Undivided	242+00.000	245+14.280	314.28	0.0595	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.16	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
31	Rural Two-Lane Segment Two-lane Undivided	245+14.280	246+55.100	140.82	0.0267	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.16	6.2	3	false	0	false	false	false				
32	Rural Two-Lane Segment Two-lane Undivided	246+55.100	248+00.000	144.90	0.0274	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.42	6.2	3	false	0	false	false	false				
33	Rural Two-Lane Segment Two-lane Undivided	248+00.000	249+00.000	100.00	0.0189	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	0.00	-0.42	6.2	3	false	0	false	false	false				
34	Rural Two-Lane Segment Two-lane Undivided	249+00.000	251+21.980	221.98	0.0420	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.42	6.2	3	false	0	false	false	false				
35	Rural Two-Lane Segment Two-lane Undivided	251+21.980	252+40.240	118.26	0.0224	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	3.43	6.2	3	false	0	false	false	false				
36	Rural Two-Lane Segment Two-lane Undivided	252+40.240	263+22.600	1,082.36	0.2050	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false				
37	Rural Two-Lane Segment Two-lane Undivided	263+22.600	272+66.740	944.14	0.1788	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false	12,237.00	2.0	true	70
38	Rural Two-Lane Segment Two-lane Undivided	272+66.740	280+00.000	733.26	0.1389	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false				
39	Rural Two-Lane Segment Two-lane Undivided	280+00.000	283+15.050	315.05	0.0597	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false				
40	Rural Two-Lane Segment Two-lane Undivided	283+15.050	284+08.540	93.49	0.0177	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	4.47	6.2	3	false	0	false	false	false				
41	Rural Two-Lane Segment Two-lane Undivided	284+08.540	288+50.000	441.46	0.0836	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
42	Rural Two-Lane Segment Two-lane Undivided	288+50.000	289+00.000	50.00	0.0095	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
43	Rural Two-Lane Segment Two-lane Undivided	289+00.000	295+90.000	690.00	0.1307	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
44	Rural Two-Lane Segment Two-lane Undivided	295+90.000	296+00.000	10.00	0.0019	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	0.00	-1.47	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
45	Rural Two-Lane Segment Two-lane Undivided	296+00.000	296+10.000	10.00	0.0019	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	0.00	-1.47	6.2	3	false	0	false	false	false				
46	Rural Two-Lane Segment Two-lane Undivided	296+10.000	296+96.520	86.52	0.0164	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
47	Rural Two-Lane Segment Two-lane Undivided	296+96.520	298+33.660	137.14	0.0260	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
48	Rural Two-Lane Segment Two-lane Undivided	298+33.660	303+50.000	516.34	0.0978	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.61	6.2	3	false	0	false	false	false				
49	Rural Two-Lane Segment Two-lane Undivided	303+50.000	304+50.000	100.00	0.0189	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.61	6.2	3	false	0	false	false	false				
50	Rural Two-Lane Segment Two-lane Undivided	304+50.000	305+02.039	52.04	0.0099	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.61	6.2	3	false	0	false	false	false				
51	Rural Two-Lane Segment Two-lane Undivided	305+02.039	309+35.490	433.45	0.0821	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.15	6.2	3	false	0	false	false	false				
52	Rural Two-Lane Segment Two-lane Undivided	309+35.490	311+70.000	234.51	0.0444	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.24	6.2	3	false	0	false	false	false				
53	Rural Two-Lane Segment Two-lane Undivided	311+70.000	313+25.000	155.00	0.0294	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.24	6.2	3	false	0	false	false	false				
54	Rural Two-Lane Segment Two-lane Undivided	313+25.000	323+00.000	975.00	0.1847	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.33	6.2	3	false	0	false	false	false				
55	Rural Two-Lane Segment Two-lane Undivided	323+00.000	323+26.980	26.98	0.0051	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.33	6.2	3	false	0	false	false	false				
56	Rural Two-Lane Segment Two-lane Undivided	323+26.980	328+89.230	562.25	0.1065	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.26	6.2	3	false	0	false	false	false				
57	Rural Two-Lane Segment Two-lane Undivided	328+89.230	329+81.740	92.51	0.0175	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.52	6.2	3	false	0	false	false	false				
58	Rural Two-Lane Segment Two-lane Undivided	329+81.740	333+24.920	343.18	0.0650	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.52	6.2	3	false	0	false	false	false	4,010.13	2.0	true	70
59	Rural Two-Lane Segment Two-lane Undivided	333+24.920	334+00.000	75.08	0.0142	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-2.17	6.2	3	false	0	false	false	false	4,010.13	2.0	true	70

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
60	Rural Two-Lane Segment Two-lane Undivided	334+00.000	335+39.960	139.96	0.0265	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-2.17	6.2	3	false	0	false	false	false	4,010.13	2.0	true	70
61	Rural Two-Lane Segment Two-lane Undivided	335+39.960	342+39.000	699.04	0.1324	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-2.17	6.2	3	false	0	false	false	false				
62	Rural Two-Lane Segment Two-lane Undivided	342+39.000	343+00.000	61.00	0.0116	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
63	Rural Two-Lane Segment Two-lane Undivided	343+00.000	351+20.000	820.00	0.1553	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
64	Rural Two-Lane Segment Two-lane Undivided	351+20.000	352+00.000	80.00	0.0152	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	0.00	-0.24	6.2	3	false	0	false	false	false				
65	Rural Two-Lane Segment Two-lane Undivided	352+00.000	352+20.000	20.00	0.0038	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	0.00	-0.24	6.2	3	false	0	false	false	false				
66	Rural Two-Lane Segment Two-lane Undivided	352+20.000	362+50.000	1,030.00	0.1951	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
67	Rural Two-Lane Segment Two-lane Undivided	362+50.000	369+14.990	664.99	0.1259	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
68	Rural Two-Lane Segment Two-lane Undivided	369+14.990	370+30.000	115.01	0.0218	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
69	Rural Two-Lane Segment Two-lane Undivided	370+30.000	370+60.000	30.00	0.0057	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
70	Rural Two-Lane Segment Two-lane Undivided	370+60.000	376+83.610	623.61	0.1181	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
71	Rural Two-Lane Segment Two-lane Undivided	376+83.610	378+00.000	116.39	0.0220	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
72	Rural Two-Lane Segment Two-lane Undivided	378+00.000	378+40.000	40.00	0.0076	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
73	Rural Two-Lane Segment Two-lane Undivided	378+40.000	378+60.000	20.00	0.0038	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
74	Rural Two-Lane Segment Two-lane Undivided	378+60.000	379+00.000	40.00	0.0076	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
75	Rural Two-Lane Segment Two-lane Undivided	379+00.000	379+62.690	62.69	0.0119	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
76	Rural Two-Lane Segment Two-lane Undivided	379+62.690	385+22.970	560.28	0.1061	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false				
77	Rural Two-Lane Segment Two-lane Undivided	385+22.970	386+60.000	137.03	0.0260	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
78	Rural Two-Lane Segment Two-lane Undivided	386+60.000	389+50.000	290.00	0.0549	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
79	Rural Two-Lane Segment Two-lane Undivided	389+50.000	394+00.000	450.00	0.0852	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
80	Rural Two-Lane Segment Two-lane Undivided	394+00.000	396+46.150	246.15	0.0466	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
81	Rural Two-Lane Segment Two-lane Undivided	396+46.150	397+00.000	53.85	0.0102	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
82	Rural Two-Lane Segment Two-lane Undivided	397+00.000	399+00.000	200.00	0.0379	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	8.00	0.72	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
83	Rural Two-Lane Segment Two-lane Undivided	399+00.000	405+75.410	675.41	0.1279	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
84	Rural Two-Lane Segment Two-lane Undivided	405+75.410	406+00.000	24.59	0.0047	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false				
85	Rural Two-Lane Segment Two-lane Undivided	406+00.000	407+00.000	100.00	0.0189	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	8.00	0.72	6.2	3	false	0	false	false	false				
86	Rural Two-Lane Segment Two-lane Undivided	407+00.000	443+25.000	3,625.00	0.6866	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false				
87	Rural Two-Lane Segment Two-lane Undivided	443+25.000	445+50.000	225.00	0.0426	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
88	Rural Two-Lane Segment Two-lane Undivided	445+50.000	452+50.000	700.00	0.1326	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
89	Rural Two-Lane Segment Two-lane Undivided	452+50.000	459+00.000	650.00	0.1231	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
90	Rural Two-Lane Segment Two-lane Undivided	459+00.000	460+00.000	100.00	0.0189	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	0.00	-0.96	6.2	3	false	0	false	false	false				
91	Rural Two-Lane Segment Two-lane Undivided	460+00.000	460+58.580	58.58	0.0111	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
92	Rural Two-Lane Segment Two-lane Undivided	460+58.580	485+61.230	2,502.65	0.4740	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.01	6.2	3	false	0	false	false	false				
93	Rural Two-Lane Segment Two-lane Undivided	485+61.230	503+00.000	1,738.77	0.3293	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	false	false				
94	Rural Two-Lane Segment Two-lane Undivided	503+00.000	507+00.000	400.00	0.0758	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	false	false				
95	Rural Two-Lane Segment Two-lane Undivided	507+00.000	508+00.000	100.00	0.0189	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	true	false				
96	Rural Two-Lane Segment Two-lane Undivided	508+00.000	508+08.240	8.24	0.0016	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	true	false				
97	Rural Two-Lane Segment Two-lane Undivided	508+08.240	510+30.000	221.76	0.0420	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	false	true	false				
98	Rural Two-Lane Segment Two-lane Undivided	510+30.000	512+00.000	170.00	0.0322	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	false	false	false				
99	Rural Two-Lane Segment Two-lane Undivided	512+00.000	513+00.000	100.00	0.0189	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	0.21	6.2	3	false	0	false	true	false				
100	Rural Two-Lane Segment Two-lane Undivided	513+00.000	515+00.000	200.00	0.0379	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	false	true	false				
101	Rural Two-Lane Segment Two-lane Undivided	515+00.000	520+00.000	500.00	0.0947	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	true	true	false				
102	Rural Two-Lane Segment Two-lane Undivided	520+00.000	520+49.150	49.15	0.0093	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	0.21	6.2	3	false	0	false	true	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
103	Rural Two-Lane Segment Two-lane Undivided	520+49.150	521+00.000	50.85	0.0096	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	0.21	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
104	Rural Two-Lane Segment Two-lane Undivided	521+00.000	523+38.600	238.60	0.0452	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
105	Rural Two-Lane Segment Two-lane Undivided	523+38.600	524+00.000	61.40	0.0116	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	1.90	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
106	Rural Two-Lane Segment Two-lane Undivided	524+00.000	525+00.000	100.00	0.0189	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	1.90	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
107	Rural Two-Lane Segment Two-lane Undivided	525+00.000	525+18.580	18.58	0.0035	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	1.90	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
108	Rural Two-Lane Segment Two-lane Undivided	525+18.580	528+00.000	281.42	0.0533	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.02	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
109	Rural Two-Lane Segment Two-lane Undivided	528+00.000	529+00.000	100.00	0.0189	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.02	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
110	Rural Two-Lane Segment Two-lane Undivided	529+00.000	539+00.000	1,000.00	0.1894	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.02	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
111	Rural Two-Lane Segment Two-lane Undivided	539+00.000	539+50.000	50.00	0.0095	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.02	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
112	Rural Two-Lane Segment Two-lane Undivided	539+50.000	540+00.000	50.00	0.0095	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
113	Rural Two-Lane Segment Two-lane Undivided	540+00.000	540+50.000	50.00	0.0095	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
114	Rural Two-Lane Segment Two-lane Undivided	540+50.000	540+74.370	24.37	0.0046	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
115	Rural Two-Lane Segment Two-lane Undivided	540+74.370	541+00.000	25.63	0.0049	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
116	Rural Two-Lane Segment Two-lane Undivided	541+00.000	541+50.000	50.00	0.0095	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
117	Rural Two-Lane Segment Two-lane Undivided	541+50.000	541+70.000	20.00	0.0038	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
118	Rural Two-Lane Segment Two-lane Undivided	541+70.000	542+30.000	60.00	0.0114	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
119	Rural Two-Lane Segment Two-lane Undivided	542+30.000	542+64.000	34.00	0.0064	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false				
120	Rural Two-Lane Segment Two-lane Undivided	542+64.000	543+34.000	70.00	0.0133	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false				
121	Rural Two-Lane Segment Two-lane Undivided	543+34.000	544+00.000	66.00	0.0125	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false				
122	Rural Two-Lane Segment Two-lane Undivided	544+00.000	545+00.000	100.00	0.0189	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
123	Rural Two-Lane Segment Two-lane Undivided	545+00.000	548+23.000	323.00	0.0612	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
124	Rural Two-Lane Segment Two-lane Undivided	548+23.000	553+70.000	547.00	0.1036	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
125	Rural Two-Lane Segment Two-lane Undivided	553+70.000	554+00.000	30.00	0.0057	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	false	false				
126	Rural Two-Lane Segment Two-lane Undivided	554+00.000	554+20.000	20.00	0.0038	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
127	Rural Two-Lane Segment Two-lane Undivided	554+20.000	560+00.000	580.00	0.1098	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
128	Rural Two-Lane Segment Two-lane Undivided	560+00.000	562+58.560	258.56	0.0490	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
129	Rural Two-Lane Segment Two-lane Undivided	562+58.560	564+00.000	141.44	0.0268	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
130	Rural Two-Lane Segment Two-lane Undivided	564+00.000	565+00.000	100.00	0.0189	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
131	Rural Two-Lane Segment Two-lane Undivided	565+00.000	565+77.000	77.00	0.0146	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
132	Rural Two-Lane Segment Two-lane Undivided	565+77.000	566+10.000	33.00	0.0063	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				
133	Rural Two-Lane Segment Two-lane Undivided	566+10.000	566+50.000	40.00	0.0076	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				
134	Rural Two-Lane Segment Two-lane Undivided	566+50.000	569+37.000	287.00	0.0544	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
135	Rural Two-Lane Segment Two-lane Undivided	569+37.000	569+70.000	33.00	0.0063	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	0.00	-0.20	6.2	3	false	0	false	false	false				
136	Rural Two-Lane Segment Two-lane Undivided	569+70.000	570+00.000	30.00	0.0057	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
137	Rural Two-Lane Segment Two-lane Undivided	570+00.000	575+00.000	500.00	0.0947	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	true	false	false				
138	Rural Two-Lane Segment Two-lane Undivided	575+00.000	579+50.000	450.00	0.0852	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
139	Rural Two-Lane Segment Two-lane Undivided	579+50.000	579+70.000	20.00	0.0038	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				
140	Rural Two-Lane Segment Two-lane Undivided	579+70.000	580+10.000	40.00	0.0076	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				

Table 3. Crash History Highway - Homogeneous Segments (Section 1)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
1	Rural Two-Lane Segment Two-lane Undivided	171+44.000	172+42.000	98.00	0.0186	2018-2022: 2,085	12.00	12.00	8.00	8.00	4.25	6.2	3	false	0	false	false	false				
2	Rural Two-Lane Segment Two-lane Undivided	172+42.000	174+52.690	210.69	0.0399	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.17	6.2	3	false	0	false	false	false				
3	Rural Two-Lane Segment Two-lane Undivided	174+52.690	176+25.000	172.31	0.0326	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.17	6.2	3	false	0	false	false	false	2,074.80	2.0	true	40
4	Rural Two-Lane Segment Two-lane Undivided	176+25.000	178+85.250	260.25	0.0493	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.88	6.2	3	false	0	false	false	false	2,074.80	2.0	true	40
5	Rural Two-Lane Segment Two-lane Undivided	178+85.250	183+75.370	490.12	0.0928	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.88	6.2	3	false	0	false	false	false				
6	Rural Two-Lane Segment Two-lane Undivided	183+75.370	184+00.000	24.63	0.0047	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
7	Rural Two-Lane Segment Two-lane Undivided	184+00.000	184+45.000	45.00	0.0085	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
8	Rural Two-Lane Segment Two-lane Undivided	184+45.000	185+20.000	75.00	0.0142	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
9	Rural Two-Lane Segment Two-lane Undivided	185+20.000	186+60.000	140.00	0.0265	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
10	Rural Two-Lane Segment Two-lane Undivided	186+60.000	187+20.000	60.00	0.0114	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
11	Rural Two-Lane Segment Two-lane Undivided	187+20.000	187+60.000	40.00	0.0076	2018-2022: 2,085	12.00	12.00	0.00	0.00	1.13	6.2	3	false	0	false	false	false				
12	Rural Two-Lane Segment Two-lane Undivided	187+60.000	190+00.000	240.00	0.0455	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
13	Rural Two-Lane Segment Two-lane Undivided	190+00.000	192+00.000	200.00	0.0379	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
14	Rural Two-Lane Segment Two-lane Undivided	192+00.000	192+39.270	39.27	0.0074	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
15	Rural Two-Lane Segment Two-lane Undivided	192+39.270	193+60.000	120.73	0.0229	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.94	6.2	3	false	0	false	false	false				
16	Rural Two-Lane Segment Two-lane Undivided	193+60.000	197+65.000	405.00	0.0767	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.94	6.2	3	false	0	false	false	false				
17	Rural Two-Lane Segment Two-lane Undivided	197+65.000	199+00.000	135.00	0.0256	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.94	6.2	3	false	0	false	false	false				
18	Rural Two-Lane Segment Two-lane Undivided	199+00.000	201+63.750	263.75	0.0500	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.94	6.2	3	false	0	false	false	false				
19	Rural Two-Lane Segment Two-lane Undivided	201+63.750	202+00.000	36.25	0.0069	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.13	6.2	3	false	0	false	false	false				
20	Rural Two-Lane Segment Two-lane Undivided	202+00.000	207+00.000	500.00	0.0947	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.13	6.2	3	false	0	false	false	false				
21	Rural Two-Lane Segment Two-lane Undivided	207+00.000	207+49.760	49.76	0.0094	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.13	6.2	3	false	0	false	false	false				
22	Rural Two-Lane Segment Two-lane Undivided	207+49.760	217+74.250	1,024.49	0.1940	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.70	6.2	3	false	0	false	false	false				
23	Rural Two-Lane Segment Two-lane Undivided	217+74.250	221+00.000	325.75	0.0617	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false				
24	Rural Two-Lane Segment Two-lane Undivided	221+00.000	226+00.000	500.00	0.0947	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false				
25	Rural Two-Lane Segment Two-lane Undivided	226+00.000	230+66.250	466.25	0.0883	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
26	Rural Two-Lane Segment Two-lane Undivided	230+66.250	231+39.700	73.45	0.0139	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
27	Rural Two-Lane Segment Two-lane Undivided	231+39.700	235+00.000	360.30	0.0682	2018-2022: 2,085	12.00	12.00	8.00	8.00	-2.00	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
28	Rural Two-Lane Segment Two-lane Undivided	235+00.000	241+61.390	661.39	0.1253	2018-2022: 2,085	12.00	12.00	8.00	8.00	-2.00	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
29	Rural Two-Lane Segment Two-lane Undivided	241+61.390	242+00.000	38.61	0.0073	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.16	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
30	Rural Two-Lane Segment Two-lane Undivided	242+00.000	245+14.280	314.28	0.0595	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.16	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
31	Rural Two-Lane Segment Two-lane Undivided	245+14.280	246+55.100	140.82	0.0267	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.16	6.2	3	false	0	false	false	false				
32	Rural Two-Lane Segment Two-lane Undivided	246+55.100	248+00.000	144.90	0.0274	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.42	6.2	3	false	0	false	false	false				
33	Rural Two-Lane Segment Two-lane Undivided	248+00.000	249+00.000	100.00	0.0189	2018-2022: 2,085	12.00	12.00	0.00	0.00	-0.42	6.2	3	false	0	false	false	false				
34	Rural Two-Lane Segment Two-lane Undivided	249+00.000	251+21.980	221.98	0.0420	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.42	6.2	3	false	0	false	false	false				
35	Rural Two-Lane Segment Two-lane Undivided	251+21.980	252+40.240	118.26	0.0224	2018-2022: 2,085	12.00	12.00	8.00	8.00	3.43	6.2	3	false	0	false	false	false				
36	Rural Two-Lane Segment Two-lane Undivided	252+40.240	263+22.600	1,082.36	0.2050	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false				
37	Rural Two-Lane Segment Two-lane Undivided	263+22.600	272+66.740	944.14	0.1788	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false	12,237.00	2.0	true	70
38	Rural Two-Lane Segment Two-lane Undivided	272+66.740	280+00.000	733.26	0.1389	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false				
39	Rural Two-Lane Segment Two-lane Undivided	280+00.000	283+15.050	315.05	0.0597	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false				
40	Rural Two-Lane Segment Two-lane Undivided	283+15.050	284+08.540	93.49	0.0177	2018-2022: 2,085	12.00	12.00	8.00	8.00	4.47	6.2	3	false	0	false	false	false				
41	Rural Two-Lane Segment Two-lane Undivided	284+08.540	288+50.000	441.46	0.0836	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
42	Rural Two-Lane Segment Two-lane Undivided	288+50.000	289+00.000	50.00	0.0095	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
43	Rural Two-Lane Segment Two-lane Undivided	289+00.000	295+90.000	690.00	0.1307	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
44	Rural Two-Lane Segment Two-lane Undivided	295+90.000	296+00.000	10.00	0.0019	2018-2022: 2,085	12.00	12.00	0.00	0.00	-1.47	6.2	3	false	0	false	false	false				
45	Rural Two-Lane Segment Two-lane Undivided	296+00.000	296+10.000	10.00	0.0019	2018-2022: 2,085	12.00	12.00	0.00	0.00	-1.47	6.2	3	false	0	false	false	false				
46	Rural Two-Lane Segment Two-lane Undivided	296+10.000	296+96.520	86.52	0.0164	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
47	Rural Two-Lane Segment Two-lane Undivided	296+96.520	298+33.660	137.14	0.0260	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
48	Rural Two-Lane Segment Two-lane Undivided	298+33.660	303+50.000	516.34	0.0978	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.61	6.2	3	false	0	false	false	false				
49	Rural Two-Lane Segment Two-lane Undivided	303+50.000	304+50.000	100.00	0.0189	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.61	6.2	3	false	0	false	false	false				
50	Rural Two-Lane Segment Two-lane Undivided	304+50.000	305+02.039	52.04	0.0099	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.61	6.2	3	false	0	false	false	false				
51	Rural Two-Lane Segment Two-lane Undivided	305+02.039	309+35.490	433.45	0.0821	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.15	6.2	3	false	0	false	false	false				
52	Rural Two-Lane Segment Two-lane Undivided	309+35.490	311+70.000	234.51	0.0444	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.24	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
53	Rural Two-Lane Segment Two-lane Undivided	311+70.000	313+25.000	155.00	0.0294	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.24	6.2	3	false	0	false	false	false				
54	Rural Two-Lane Segment Two-lane Undivided	313+25.000	323+00.000	975.00	0.1847	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.33	6.2	3	false	0	false	false	false				
55	Rural Two-Lane Segment Two-lane Undivided	323+00.000	323+26.980	26.98	0.0051	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.33	6.2	3	false	0	false	false	false				
56	Rural Two-Lane Segment Two-lane Undivided	323+26.980	328+89.230	562.25	0.1065	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.26	6.2	3	false	0	false	false	false				
57	Rural Two-Lane Segment Two-lane Undivided	328+89.230	329+81.740	92.51	0.0175	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.52	6.2	3	false	0	false	false	false				
58	Rural Two-Lane Segment Two-lane Undivided	329+81.740	333+24.920	343.18	0.0650	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.52	6.2	3	false	0	false	false	false	4,010.13	2.0	true	70
59	Rural Two-Lane Segment Two-lane Undivided	333+24.920	334+00.000	75.08	0.0142	2018-2022: 2,085	12.00	12.00	8.00	8.00	-2.17	6.2	3	false	0	false	false	false	4,010.13	2.0	true	70
60	Rural Two-Lane Segment Two-lane Undivided	334+00.000	335+39.960	139.96	0.0265	2018-2022: 2,085	12.00	12.00	8.00	8.00	-2.17	6.2	3	false	0	false	false	false	4,010.13	2.0	true	70
61	Rural Two-Lane Segment Two-lane Undivided	335+39.960	342+39.000	699.04	0.1324	2018-2022: 2,085	12.00	12.00	8.00	8.00	-2.17	6.2	3	false	0	false	false	false				
62	Rural Two-Lane Segment Two-lane Undivided	342+39.000	343+00.000	61.00	0.0116	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
63	Rural Two-Lane Segment Two-lane Undivided	343+00.000	351+20.000	820.00	0.1553	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
64	Rural Two-Lane Segment Two-lane Undivided	351+20.000	352+00.000	80.00	0.0152	2018-2022: 2,085	12.00	12.00	0.00	0.00	-0.24	6.2	3	false	0	false	false	false				
65	Rural Two-Lane Segment Two-lane Undivided	352+00.000	352+20.000	20.00	0.0038	2018-2022: 2,085	12.00	12.00	0.00	0.00	-0.24	6.2	3	false	0	false	false	false				
66	Rural Two-Lane Segment Two-lane Undivided	352+20.000	362+50.000	1,030.00	0.1951	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
67	Rural Two-Lane Segment Two-lane Undivided	362+50.000	369+14.990	664.99	0.1259	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
68	Rural Two-Lane Segment Two-lane Undivided	369+14.990	370+30.000	115.01	0.0218	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
69	Rural Two-Lane Segment Two-lane Undivided	370+30.000	370+60.000	30.00	0.0057	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
70	Rural Two-Lane Segment Two-lane Undivided	370+60.000	376+83.610	623.61	0.1181	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
71	Rural Two-Lane Segment Two-lane Undivided	376+83.610	378+00.000	116.39	0.0220	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
72	Rural Two-Lane Segment Two-lane Undivided	378+00.000	378+40.000	40.00	0.0076	2018-2022: 2,085	12.00	12.00	0.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
73	Rural Two-Lane Segment Two-lane Undivided	378+40.000	378+60.000	20.00	0.0038	2018-2022: 2,085	12.00	12.00	0.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
74	Rural Two-Lane Segment Two-lane Undivided	378+60.000	379+00.000	40.00	0.0076	2018-2022: 2,085	12.00	12.00	0.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
75	Rural Two-Lane Segment Two-lane Undivided	379+00.000	379+62.690	62.69	0.0119	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
76	Rural Two-Lane Segment Two-lane Undivided	379+62.690	385+22.970	560.28	0.1061	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false				
77	Rural Two-Lane Segment Two-lane Undivided	385+22.970	386+60.000	137.03	0.0260	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
78	Rural Two-Lane Segment Two-lane Undivided	386+60.000	389+50.000	290.00	0.0549	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
79	Rural Two-Lane Segment Two-lane Undivided	389+50.000	394+00.000	450.00	0.0852	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
80	Rural Two-Lane Segment Two-lane Undivided	394+00.000	396+46.150	246.15	0.0466	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
81	Rural Two-Lane Segment Two-lane Undivided	396+46.150	397+00.000	53.85	0.0102	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
82	Rural Two-Lane Segment Two-lane Undivided	397+00.000	399+00.000	200.00	0.0379	2018-2022: 2,085	12.00	12.00	0.00	8.00	0.72	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
83	Rural Two-Lane Segment Two-lane Undivided	399+00.000	405+75.410	675.41	0.1279	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
84	Rural Two-Lane Segment Two-lane Undivided	405+75.410	406+00.000	24.59	0.0047	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false				
85	Rural Two-Lane Segment Two-lane Undivided	406+00.000	407+00.000	100.00	0.0189	2018-2022: 2,085	12.00	12.00	0.00	8.00	0.72	6.2	3	false	0	false	false	false				
86	Rural Two-Lane Segment Two-lane Undivided	407+00.000	443+25.000	3,625.00	0.6866	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false				
87	Rural Two-Lane Segment Two-lane Undivided	443+25.000	445+50.000	225.00	0.0426	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
88	Rural Two-Lane Segment Two-lane Undivided	445+50.000	452+50.000	700.00	0.1326	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
89	Rural Two-Lane Segment Two-lane Undivided	452+50.000	459+00.000	650.00	0.1231	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
90	Rural Two-Lane Segment Two-lane Undivided	459+00.000	460+00.000	100.00	0.0189	2018-2022: 2,085	12.00	12.00	8.00	0.00	-0.96	6.2	3	false	0	false	false	false				
91	Rural Two-Lane Segment Two-lane Undivided	460+00.000	460+58.580	58.58	0.0111	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
92	Rural Two-Lane Segment Two-lane Undivided	460+58.580	485+61.230	2,502.65	0.4740	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.01	6.2	3	false	0	false	false	false				
93	Rural Two-Lane Segment Two-lane Undivided	485+61.230	503+00.000	1,738.77	0.3293	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	false	false				
94	Rural Two-Lane Segment Two-lane Undivided	503+00.000	507+00.000	400.00	0.0758	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	false	false				
95	Rural Two-Lane Segment Two-lane Undivided	507+00.000	508+00.000	100.00	0.0189	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	true	false				
96	Rural Two-Lane Segment Two-lane Undivided	508+00.000	508+08.240	8.24	0.0016	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	true	false				
97	Rural Two-Lane Segment Two-lane Undivided	508+08.240	510+30.000	221.76	0.0420	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	false	true	false				
98	Rural Two-Lane Segment Two-lane Undivided	510+30.000	512+00.000	170.00	0.0322	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	false	false	false				
99	Rural Two-Lane Segment Two-lane Undivided	512+00.000	513+00.000	100.00	0.0189	2018-2022: 4,325	12.00	12.00	0.00	0.00	0.21	6.2	3	false	0	false	true	false				
100	Rural Two-Lane Segment Two-lane Undivided	513+00.000	515+00.000	200.00	0.0379	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	false	true	false				
101	Rural Two-Lane Segment Two-lane Undivided	515+00.000	520+00.000	500.00	0.0947	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	true	true	false				
102	Rural Two-Lane Segment Two-lane Undivided	520+00.000	520+49.150	49.15	0.0093	2018-2022: 4,325	12.00	12.00	0.00	0.00	0.21	6.2	3	false	0	false	true	false				
103	Rural Two-Lane Segment Two-lane Undivided	520+49.150	521+00.000	50.85	0.0096	2018-2022: 4,325	12.00	12.00	0.00	0.00	0.21	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
104	Rural Two-Lane Segment Two-lane Undivided	521+00.000	523+38.600	238.60	0.0452	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
105	Rural Two-Lane Segment Two-lane Undivided	523+38.600	524+00.000	61.40	0.0116	2018-2022: 4,325	12.00	12.00	8.00	8.00	1.90	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
106	Rural Two-Lane Segment Two-lane Undivided	524+00.000	525+00.000	100.00	0.0189	2018-2022: 4,325	12.00	12.00	0.00	0.00	1.90	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
107	Rural Two-Lane Segment Two-lane Undivided	525+00.000	525+18.580	18.58	0.0035	2018-2022: 4,325	12.00	12.00	8.00	8.00	1.90	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
108	Rural Two-Lane Segment Two-lane Undivided	525+18.580	528+00.000	281.42	0.0533	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.02	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
109	Rural Two-Lane Segment Two-lane Undivided	528+00.000	529+00.000	100.00	0.0189	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.02	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
110	Rural Two-Lane Segment Two-lane Undivided	529+00.000	539+00.000	1,000.00	0.1894	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.02	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
111	Rural Two-Lane Segment Two-lane Undivided	539+00.000	539+50.000	50.00	0.0095	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.02	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
112	Rural Two-Lane Segment Two-lane Undivided	539+50.000	540+00.000	50.00	0.0095	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
113	Rural Two-Lane Segment Two-lane Undivided	540+00.000	540+50.000	50.00	0.0095	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
114	Rural Two-Lane Segment Two-lane Undivided	540+50.000	540+74.370	24.37	0.0046	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
115	Rural Two-Lane Segment Two-lane Undivided	540+74.370	541+00.000	25.63	0.0049	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
116	Rural Two-Lane Segment Two-lane Undivided	541+00.000	541+50.000	50.00	0.0095	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
117	Rural Two-Lane Segment Two-lane Undivided	541+50.000	541+70.000	20.00	0.0038	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
118	Rural Two-Lane Segment Two-lane Undivided	541+70.000	542+30.000	60.00	0.0114	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
119	Rural Two-Lane Segment Two-lane Undivided	542+30.000	542+64.000	34.00	0.0064	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false				
120	Rural Two-Lane Segment Two-lane Undivided	542+64.000	543+34.000	70.00	0.0133	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false				
121	Rural Two-Lane Segment Two-lane Undivided	543+34.000	544+00.000	66.00	0.0125	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false				
122	Rural Two-Lane Segment Two-lane Undivided	544+00.000	545+00.000	100.00	0.0189	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
123	Rural Two-Lane Segment Two-lane Undivided	545+00.000	548+23.000	323.00	0.0612	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
124	Rural Two-Lane Segment Two-lane Undivided	548+23.000	553+70.000	547.00	0.1036	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
125	Rural Two-Lane Segment Two-lane Undivided	553+70.000	554+00.000	30.00	0.0057	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	false	false				
126	Rural Two-Lane Segment Two-lane Undivided	554+00.000	554+20.000	20.00	0.0038	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	false	false				
127	Rural Two-Lane Segment Two-lane Undivided	554+20.000	560+00.000	580.00	0.1098	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
128	Rural Two-Lane Segment Two-lane Undivided	560+00.000	562+58.560	258.56	0.0490	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
129	Rural Two-Lane Segment Two-lane Undivided	562+58.560	564+00.000	141.44	0.0268	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
130	Rural Two-Lane Segment Two-lane Undivided	564+00.000	565+00.000	100.00	0.0189	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
131	Rural Two-Lane Segment Two-lane Undivided	565+00.000	565+77.000	77.00	0.0146	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
132	Rural Two-Lane Segment Two-lane Undivided	565+77.000	566+10.000	33.00	0.0063	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				
133	Rural Two-Lane Segment Two-lane Undivided	566+10.000	566+50.000	40.00	0.0076	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
134	Rural Two-Lane Segment Two-lane Undivided	566+50.000	569+37.000	287.00	0.0544	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
135	Rural Two-Lane Segment Two-lane Undivided	569+37.000	569+70.000	33.00	0.0063	2018-2022: 4,325	12.00	12.00	8.00	0.00	-0.20	6.2	3	false	0	false	false	false				
136	Rural Two-Lane Segment Two-lane Undivided	569+70.000	570+00.000	30.00	0.0057	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
137	Rural Two-Lane Segment Two-lane Undivided	570+00.000	575+00.000	500.00	0.0947	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	true	false	false				
138	Rural Two-Lane Segment Two-lane Undivided	575+00.000	579+50.000	450.00	0.0852	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
139	Rural Two-Lane Segment Two-lane Undivided	579+50.000	579+70.000	20.00	0.0038	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				
140	Rural Two-Lane Segment Two-lane Undivided	579+70.000	580+10.000	40.00	0.0076	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				

Table 4. Evaluation Intersection - Section 1

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
1	West Central School/SD38 (v2)	Rural Two-Lane Intersection Three-Legged w/STOP control	569+50.000	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	2025: 912; 2026: 932; 2027: 951; 2028: 970; 2029: 990; 2030: 1,013; 2031: 1,036; 2032: 1,059; 2033: 1,082; 2034: 1,105; 2035: 1,129; 2036: 1,152; 2037: 1,175; 2038: 1,198; 2039: 1,221; 2040: 1,245; 2041: 1,273; 2042: 1,302; 2043: 1,330; 2044: 1,359; 2045: 1,387; 2046: 1,416; 2047: 1,444; 2048: 1,473; 2049: 1,501; 2050: 1,530	3	Stop-Controlled	0	0	1.37		false
2	2nd/SD38 (v2)	Rural Two-Lane Intersection Four-Legged w/STOP control	566+00.000	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	2025: 1,338; 2026: 1,366; 2027: 1,394; 2028: 1,422; 2029: 1,450; 2030: 1,484; 2031: 1,518; 2032: 1,552; 2033: 1,586; 2034: 1,620; 2035: 1,654; 2036: 1,688; 2037: 1,722; 2038: 1,756; 2039: 1,790; 2040: 1,825; 2041: 1,867; 2042: 1,909; 2043: 1,951; 2044: 1,993; 2045: 2,035; 2046: 2,077; 2047: 2,119; 2048: 2,161; 2049: 2,203; 2050: 2,245	4	Stop-Controlled	1	0	41.37	41.37	false
4	459/SD38 (v2)	Rural Two-Lane Intersection Four-Legged w/STOP control	296+00.000	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	2025: 320; 2026: 329; 2027: 337; 2028: 346; 2029: 355; 2030: 363; 2031: 371; 2032: 379; 2033: 387; 2034: 395; 2035: 404; 2036: 412; 2037: 420; 2038: 428; 2039: 436; 2040: 445; 2041: 455; 2042: 465; 2043: 475; 2044: 485; 2045: 495; 2046: 505; 2047: 515; 2048: 525; 2049: 535; 2050: 545	4	Stop-Controlled	2	0	0.04	0.04	false
5	SD38/SD19_Build (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	187+50.000	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	2025: 2,094; 2026: 2,140; 2027: 2,187; 2028: 2,233; 2029: 2,280; 2030: 2,336; 2031: 2,392; 2032: 2,449; 2033: 2,505; 2034: 2,561; 2035: 2,618; 2036: 2,674; 2037: 2,730; 2038: 2,787; 2039: 2,843; 2040: 2,900; 2041: 2,967; 2042: 3,034; 2043: 3,101; 2044: 3,168; 2045: 3,235; 2046: 3,302; 2047: 3,369; 2048: 3,436; 2049: 3,503; 2050: 3,570	4	Stop-Controlled	2	0	5.84	5.84	false
6	I90 SPEEDWAY/SD38 (v1)	Rural Two-Lane Intersection Three-Legged w/STOP control	378+50.000	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	2025: 260; 2026: 264; 2027: 267; 2028: 271; 2029: 275; 2030: 281; 2031: 288; 2032: 295; 2033: 302; 2034: 309; 2035: 315; 2036: 322; 2037: 329; 2038: 336; 2039: 343; 2040: 350; 2041: 372; 2042: 395; 2043: 417; 2044: 440; 2045: 462; 2046: 485; 2047: 507; 2048: 530; 2049: 552; 2050: 575	3	Stop-Controlled	1	1	5.46		false
7	463/SD38 (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	512+00.000	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	2025: 3,802; 2026: 3,882; 2027: 3,963; 2028: 4,044; 2029: 4,125; 2030: 4,221; 2031: 4,318; 2032: 4,415; 2033: 4,512; 2034: 4,609; 2035: 4,705; 2036: 4,802; 2037: 4,899; 2038: 4,996; 2039: 5,093; 2040: 5,190; 2041: 5,308; 2042: 5,427; 2043: 5,545; 2044: 5,664; 2045: 5,782; 2046: 5,901; 2047: 6,019; 2048: 6,138; 2049: 6,256; 2050: 6,375	4	Stop-Controlled	1	0	1.43	1.43	false
8	Main Ave/SD38 (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	524+50.000	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	2025: 1,367; 2026: 1,397; 2027: 1,426; 2028: 1,455; 2029: 1,485; 2030: 1,520; 2031: 1,555; 2032: 1,590; 2033: 1,625; 2034: 1,660; 2035: 1,695; 2036: 1,730; 2037: 1,765; 2038: 1,800; 2039: 1,835; 2040: 1,870; 2041: 1,912; 2042: 1,955; 2043: 1,997; 2044: 2,040; 2045: 2,082; 2046: 2,125; 2047: 2,167; 2048: 2,210; 2049: 2,252; 2050: 2,295	4	Stop-Controlled	0	0	11.00	10.54	false
9	Vandemark/SD38 (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	541+50.000	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	2025: 657; 2026: 672; 2027: 686; 2028: 700; 2029: 715; 2030: 731; 2031: 747; 2032: 764; 2033: 780; 2034: 796; 2035: 813; 2036: 829; 2037: 845; 2038: 862; 2039: 878; 2040: 895; 2041: 915; 2042: 936; 2043: 956; 2044: 977; 2045: 997; 2046: 1,018; 2047: 1,038; 2048: 1,059; 2049: 1,079; 2050: 1,100	4	Stop-Controlled	1	0	48.63	48.63	false

Table 5. Crash History Intersection - Section 1

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
1	West Central School/SD38 (v2)	Rural Two-Lane Intersection Three-Legged w/STOP control	569+50.000	2018-2022: 4,325	2018-2022: 855	3	Stop-Controlled	0	0	1.37		false
2	2nd/SD38 (v2)	Rural Two-Lane Intersection Four-Legged w/STOP control	566+00.000	2018-2022: 4,325	2018-2022: 1,255	4	Stop-Controlled	1	0	41.37	41.37	false
4	459/SD38 (v2)	Rural Two-Lane Intersection Four-Legged w/STOP control	296+00.000	2018-2022: 2,085	2018-2022: 295	4	Stop-Controlled	2	0	0.04	0.04	false
5	SD38/SD19_Build (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	187+50.000	2018-2022: 2,085	2018-2022: 1,955	4	Stop-Controlled	2	0	5.84	5.84	false
6	I90 SPEEDWAY/SD38 (v1)	Rural Two-Lane Intersection Three-Legged w/STOP control	378+50.000	2018-2022: 2,085	2018-2022: 250	3	Stop-Controlled	1	1	5.46		false
7	463/SD38 (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	512+00.000	2018-2022: 4,325	2018-2022: 3,560	4	Stop-Controlled	1	0	1.43	1.43	false
8	Main Ave/SD38 (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	524+50.000	2018-2022: 4,325	2018-2022: 1,280	4	Stop-Controlled	0	0	11.00	10.54	false
9	Vandemark/SD38 (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	541+50.000	2018-2022: 4,325	2018-2022: 615	4	Stop-Controlled	1	0	48.63	48.63	false

Table 6. Expected Highway Crash Rates and Frequencies Summary (Section 1)

First Year of Analysis	**2025**
Last Year of Analysis	**2050**
Evaluated Length (mi)	**7.7398**
Average Future Road AADT (vpd)	**4,284**
Expected Crashes	
Total Crashes	**476.74**
Fatal and Injury Crashes	**193.60**
Property-Damage-Only Crashes	**283.14**
Percent of Total Expected Crashes	
Percent Fatal and Injury Crashes (%)	**41**
Percent Property-Damage-Only Crashes (%)	**59**
Expected Crash Rate	
Crash Rate (crashes/mi/yr)	**2.3691**
FI Crash Rate (crashes/mi/yr)	**0.9621**
PDO Crash Rate (crashes/mi/yr)	**1.4070**
Expected Travel Crash Rate	
Total Travel (million veh-mi)	**314.63**
Travel Crash Rate (crashes/million veh-mi)	**1.51**
Travel FI Crash Rate (crashes/million veh-mi)	**0.61**
Travel PDO Crash Rate (crashes/million veh-mi)	**0.90**

Table 7. Expected Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
1	171+44.000	172+42.000	0.0186	0.237	0.402	0.0091	0.0033	0.0058	0.0155	0.0050	0.0105	-0.0063	-0.0017	-0.0047	0.4920	0.45	
2	172+42.000	174+52.690	0.0399	0.482	0.786	0.0185	0.0067	0.0119	0.0302	0.0097	0.0205	-0.0117	-0.0030	-0.0087	0.4646	0.43	
3	174+52.690	176+25.000	0.0326	0.499	0.980	0.0192	0.0072	0.0120	0.0377	0.0121	0.0256	-0.0185	-0.0049	-0.0136	0.5886	0.54	
4	176+25.000	178+85.250	0.0493	0.754	1.479	0.0290	0.0108	0.0182	0.0569	0.0183	0.0386	-0.0279	-0.0074	-0.0205	0.5886	0.54	
5	178+85.250	183+75.370	0.0928	1.121	1.829	0.0431	0.0155	0.0276	0.0703	0.0226	0.0478	-0.0272	-0.0071	-0.0201	0.4646	0.43	
6	183+75.370	184+00.000	0.0047	0.056	0.092	0.0022	0.0008	0.0014	0.0035	0.0011	0.0024	-0.0014	-0.0004	-0.0010	0.4646	0.43	
7	184+00.000	184+45.000	0.0085	0.103	0.168	0.0040	0.0014	0.0025	0.0065	0.0021	0.0044	-0.0025	-0.0006	-0.0018	0.4646	0.43	
8	184+45.000	185+20.000	0.0142	0.172	0.280	0.0066	0.0024	0.0042	0.0108	0.0035	0.0073	-0.0042	-0.0011	-0.0031	0.4646	0.43	
9	185+20.000	186+60.000	0.0265	0.320	0.522	0.0123	0.0044	0.0079	0.0201	0.0064	0.0136	-0.0078	-0.0020	-0.0058	0.4646	0.43	
10	186+60.000	187+20.000	0.0114	0.137	0.224	0.0053	0.0019	0.0034	0.0086	0.0028	0.0058	-0.0033	-0.0009	-0.0025	0.4646	0.43	
11	187+20.000	187+60.000	0.0076	0.111	0.208	0.0043	0.0016	0.0027	0.0080	0.0026	0.0054	-0.0037	-0.0010	-0.0027	0.5613	0.52	
SD38/SD19_Build (v1)	187+50.000			18.404	41.067	0.7079	0.3235	0.3844	1.5795	0.6808	0.8987	-0.8716	-0.3573	-0.5144			0.34
12	187+60.000	190+00.000	0.0455	0.549	0.895	0.0211	0.0076	0.0135	0.0344	0.0111	0.0234	-0.0133	-0.0035	-0.0099	0.4646	0.43	
13	190+00.000	192+00.000	0.0379	0.458	0.746	0.0176	0.0063	0.0113	0.0287	0.0092	0.0195	-0.0111	-0.0029	-0.0082	0.4646	0.43	
14	192+00.000	192+39.270	0.0074	0.090	0.146	0.0035	0.0012	0.0022	0.0056	0.0018	0.0038	-0.0022	-0.0006	-0.0016	0.4646	0.43	
15	192+39.270	193+60.000	0.0229	0.276	0.451	0.0106	0.0038	0.0068	0.0173	0.0056	0.0118	-0.0067	-0.0017	-0.0050	0.4646	0.43	
16	193+60.000	197+65.000	0.0767	0.927	1.511	0.0356	0.0128	0.0228	0.0581	0.0187	0.0395	-0.0225	-0.0058	-0.0166	0.4646	0.43	
17	197+65.000	199+00.000	0.0256	0.309	0.504	0.0119	0.0043	0.0076	0.0194	0.0062	0.0132	-0.0075	-0.0019	-0.0055	0.4646	0.43	
18	199+00.000	201+63.750	0.0500	0.603	0.984	0.0232	0.0083	0.0149	0.0379	0.0121	0.0257	-0.0146	-0.0038	-0.0108	0.4646	0.43	
19	201+63.750	202+00.000	0.0069	0.083	0.135	0.0032	0.0011	0.0020	0.0052	0.0017	0.0035	-0.0020	-0.0005	-0.0015	0.4646	0.43	
20	202+00.000	207+00.000	0.0947	1.144	1.866	0.0440	0.0158	0.0282	0.0718	0.0230	0.0487	-0.0278	-0.0072	-0.0205	0.4646	0.43	
21	207+00.000	207+49.760	0.0094	0.114	0.186	0.0044	0.0016	0.0028	0.0071	0.0023	0.0048	-0.0028	-0.0007	-0.0020	0.4646	0.43	
22	207+49.760	217+74.250	0.1940	2.344	3.823	0.0902	0.0324	0.0577	0.1470	0.0472	0.0998	-0.0569	-0.0148	-0.0421	0.4646	0.43	
23	217+74.250	221+00.000	0.0617	3.596	1.215	0.1383	0.0144	0.1239	0.0467	0.0150	0.0317	0.0916	-0.0006	0.0922	2.2419	2.07	
24	221+00.000	226+00.000	0.0947	1.144	1.866	0.0440	0.0158	0.0282	0.0718	0.0230	0.0487	-0.0278	-0.0072	-0.0205	0.4646	0.43	
25	226+00.000	230+66.250	0.0883	1.067	1.740	0.0410	0.0148	0.0263	0.0669	0.0215	0.0454	-0.0259	-0.0067	-0.0192	0.4646	0.43	
26	230+66.250	231+39.700	0.0139	0.188	0.333	0.0072	0.0026	0.0046	0.0128	0.0041	0.0087	-0.0055	-0.0015	-0.0041	0.5207	0.48	
27	231+39.700	235+00.000	0.0682	0.924	1.631	0.0355	0.0130	0.0225	0.0627	0.0201	0.0426	-0.0272	-0.0071	-0.0201	0.5207	0.48	
28	235+00.000	241+61.390	0.1253	4.891	2.994	0.1881	0.1175	0.0706	0.1152	0.0370	0.0782	0.0730	0.0805	-0.0076	1.5018	1.39	
29	241+61.390	242+00.000	0.0073	0.099	0.175	0.0038	0.0014	0.0024	0.0067	0.0022	0.0046	-0.0029	-0.0008	-0.0021	0.5207	0.48	
30	242+00.000	245+14.280	0.0595	0.806	1.423	0.0310	0.0113	0.0197	0.0547	0.0176	0.0372	-0.0237	-0.0062	-0.0175	0.5207	0.48	
31	245+14.280	246+55.100	0.0267	0.322	0.525	0.0124	0.0045	0.0079	0.0202	0.0065	0.0137	-0.0078	-0.0020	-0.0058	0.4646	0.43	
32	246+55.100	248+00.000	0.0274	0.332	0.541	0.0128	0.0046	0.0082	0.0208	0.0067	0.0141	-0.0080	-0.0021	-0.0060	0.4646	0.43	
33	248+00.000	249+00.000	0.0189	3.721	0.519	0.1431	0.0060	0.1371	0.0200	0.0064	0.0136	0.1231	-0.0004	0.1236	7.5559	6.97	
34	249+00.000	251+21.980	0.0420	0.508	0.828	0.0195	0.0070	0.0125	0.0319	0.0102	0.0216	-0.0123	-0.0032	-0.0091	0.4646	0.43	
35	251+21.980	252+40.240	0.0224	0.286	0.485	0.0110	0.0040	0.0070	0.0187	0.0060	0.0127	-0.0076	-0.0020	-0.0057	0.4920	0.45	
36	252+40.240	263+22.600	0.2050	5.327	4.038	0.2049	0.0424	0.1625	0.1553	0.0499	0.1055	0.0496	-0.0074	0.0570	0.9995	0.92	
37	263+22.600	272+66.740	0.1788	2.351	4.061	0.0904	0.0329	0.0575	0.1562	0.0501	0.1060	-0.0657	-0.0172	-0.0485	0.5057	0.47	
38	272+66.740	280+00.000	0.1389	1.678	2.736	0.0645	0.0232	0.0413	0.1052	0.0338	0.0715	-0.0407	-0.0106	-0.0301	0.4646	0.43	

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
39	280+00.000	283+15.050	0.0597	0.721	1.175	0.0277	0.0100	0.0178	0.0452	0.0145	0.0307	-0.0175	-0.0045	-0.0129	0.4646	0.43	
40	283+15.050	284+08.540	0.0177	0.227	0.384	0.0087	0.0032	0.0056	0.0148	0.0047	0.0100	-0.0060	-0.0016	-0.0045	0.4920	0.45	
41	284+08.540	288+50.000	0.0836	3.861	1.647	0.1485	0.0190	0.1295	0.0634	0.0203	0.0430	0.0851	-0.0013	0.0865	1.7761	1.64	
42	288+50.000	289+00.000	0.0095	0.114	0.187	0.0044	0.0016	0.0028	0.0072	0.0023	0.0049	-0.0028	-0.0007	-0.0021	0.4646	0.43	
43	289+00.000	295+90.000	0.1307	1.579	2.575	0.0607	0.0218	0.0389	0.0990	0.0318	0.0672	-0.0383	-0.0100	-0.0284	0.4646	0.43	
44	295+90.000	296+00.000	0.0019	0.028	0.052	0.0011	0.0004	0.0007	0.0020	0.0006	0.0014	-0.0009	-0.0002	-0.0007	0.5613	0.52	
459/SD38 (v2)	296+00.000			11.436	12.695	0.4399	0.1714	0.2685	0.4883	0.2104	0.2778	-0.0484	-0.0391	-0.0093			0.37
45	296+00.000	296+10.000	0.0019	0.028	0.052	0.0011	0.0004	0.0007	0.0020	0.0006	0.0014	-0.0009	-0.0002	-0.0007	0.5613	0.52	
46	296+10.000	296+96.520	0.0164	0.198	0.323	0.0076	0.0027	0.0049	0.0124	0.0040	0.0084	-0.0048	-0.0012	-0.0036	0.4646	0.43	
47	296+96.520	298+33.660	0.0260	0.314	0.512	0.0121	0.0043	0.0077	0.0197	0.0063	0.0134	-0.0076	-0.0020	-0.0056	0.4646	0.43	
48	298+33.660	303+50.000	0.0978	1.181	1.927	0.0454	0.0163	0.0291	0.0741	0.0238	0.0503	-0.0287	-0.0074	-0.0212	0.4646	0.43	
49	303+50.000	304+50.000	0.0189	0.229	0.373	0.0088	0.0032	0.0056	0.0144	0.0046	0.0097	-0.0056	-0.0014	-0.0041	0.4646	0.43	
50	304+50.000	305+02.039	0.0099	0.119	0.194	0.0046	0.0016	0.0029	0.0075	0.0024	0.0051	-0.0029	-0.0008	-0.0021	0.4646	0.43	
51	305+02.039	309+35.490	0.0821	0.992	1.617	0.0381	0.0137	0.0244	0.0622	0.0200	0.0422	-0.0241	-0.0063	-0.0178	0.4646	0.43	
52	309+35.490	311+70.000	0.0444	0.536	0.875	0.0206	0.0074	0.0132	0.0337	0.0108	0.0229	-0.0130	-0.0034	-0.0096	0.4646	0.43	
53	311+70.000	313+25.000	0.0294	0.355	0.578	0.0136	0.0049	0.0087	0.0222	0.0071	0.0151	-0.0086	-0.0022	-0.0064	0.4646	0.43	
54	313+25.000	323+00.000	0.1847	2.231	3.638	0.0858	0.0309	0.0549	0.1399	0.0449	0.0950	-0.0541	-0.0141	-0.0401	0.4646	0.43	
55	323+00.000	323+26.980	0.0051	0.062	0.101	0.0024	0.0009	0.0015	0.0039	0.0012	0.0026	-0.0015	-0.0004	-0.0011	0.4646	0.43	
56	323+26.980	328+89.230	0.1065	1.286	2.098	0.0495	0.0178	0.0317	0.0807	0.0259	0.0548	-0.0312	-0.0081	-0.0231	0.4646	0.43	
57	328+89.230	329+81.740	0.0175	0.212	0.345	0.0081	0.0029	0.0052	0.0133	0.0043	0.0090	-0.0051	-0.0013	-0.0038	0.4646	0.43	
58	329+81.740	333+24.920	0.0650	0.936	1.738	0.0360	0.0133	0.0227	0.0669	0.0215	0.0454	-0.0308	-0.0081	-0.0227	0.5541	0.51	
59	333+24.920	334+00.000	0.0142	0.205	0.380	0.0079	0.0029	0.0050	0.0146	0.0047	0.0099	-0.0067	-0.0018	-0.0050	0.5541	0.51	
60	334+00.000	335+39.960	0.0265	7.182	0.709	0.2762	0.0084	0.2679	0.0273	0.0088	0.0185	0.2490	-0.0004	0.2494	10.4210	9.62	
61	335+39.960	342+39.000	0.1324	1.599	2.608	0.0615	0.0221	0.0394	0.1003	0.0322	0.0681	-0.0388	-0.0101	-0.0287	0.4646	0.43	
62	342+39.000	343+00.000	0.0116	0.140	0.228	0.0054	0.0019	0.0034	0.0088	0.0028	0.0059	-0.0034	-0.0009	-0.0025	0.4646	0.43	
63	343+00.000	351+20.000	0.1553	4.727	3.060	0.1818	0.1065	0.0753	0.1177	0.0378	0.0799	0.0641	0.0687	-0.0046	1.1706	1.08	
64	351+20.000	352+00.000	0.0152	0.221	0.415	0.0085	0.0032	0.0054	0.0160	0.0051	0.0108	-0.0075	-0.0020	-0.0055	0.5613	0.52	
65	352+00.000	352+20.000	0.0038	0.055	0.104	0.0021	0.0008	0.0013	0.0040	0.0013	0.0027	-0.0019	-0.0005	-0.0014	0.5613	0.52	
66	352+20.000	362+50.000	0.1951	5.207	3.843	0.2003	0.0406	0.1597	0.1478	0.0474	0.1004	0.0525	-0.0069	0.0593	1.0267	0.95	
67	362+50.000	369+14.990	0.1259	1.521	2.481	0.0585	0.0210	0.0375	0.0954	0.0306	0.0648	-0.0369	-0.0096	-0.0273	0.4646	0.43	
68	369+14.990	370+30.000	0.0218	0.305	0.553	0.0117	0.0043	0.0074	0.0213	0.0068	0.0144	-0.0095	-0.0025	-0.0070	0.5385	0.50	
69	370+30.000	370+60.000	0.0057	0.080	0.144	0.0031	0.0011	0.0019	0.0055	0.0018	0.0038	-0.0025	-0.0007	-0.0018	0.5385	0.50	
70	370+60.000	376+83.610	0.1181	4.958	2.998	0.1907	0.1212	0.0695	0.1153	0.0370	0.0783	0.0754	0.0842	-0.0088	1.6146	1.49	
71	376+83.610	378+00.000	0.0220	0.309	0.559	0.0119	0.0044	0.0075	0.0215	0.0069	0.0146	-0.0096	-0.0025	-0.0071	0.5385	0.50	
72	378+00.000	378+40.000	0.0076	0.117	0.230	0.0045	0.0017	0.0028	0.0088	0.0028	0.0060	-0.0044	-0.0012	-0.0032	0.5919	0.55	
73	378+40.000	378+60.000	0.0038	0.058	0.115	0.0022	0.0008	0.0014	0.0044	0.0014	0.0030	-0.0022	-0.0006	-0.0016	0.5919	0.55	
I90 SPEEDWAY/SD38 (v1)	378+50.000			4.683	6.719	0.1801	0.0774	0.1027	0.2584	0.1073	0.1512	-0.0783	-0.0298	-0.0485			0.16
74	378+60.000	379+00.000	0.0076	0.117	0.230	0.0045	0.0017	0.0028	0.0088	0.0028	0.0060	-0.0044	-0.0012	-0.0032	0.5919	0.55	
75	379+00.000	379+62.690	0.0119	0.166	0.301	0.0064	0.0024	0.0040	0.0116	0.0037	0.0079	-0.0052	-0.0014	-0.0038	0.5385	0.50	
76	379+62.690	385+22.970	0.1061	4.133	2.091	0.1590	0.1024	0.0566	0.0804	0.0258	0.0546	0.0785	0.0766	0.0020	1.4979	1.38	
77	385+22.970	386+60.000	0.0260	0.359	0.643	0.0138	0.0051	0.0087	0.0247	0.0079	0.0168	-0.0109	-0.0029	-0.0081	0.5314	0.49	
78	386+60.000	389+50.000	0.0549	0.759	1.361	0.0292	0.0107	0.0185	0.0524	0.0168	0.0355	-0.0232	-0.0061	-0.0171	0.5314	0.49	

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
79	389+50.000	394+00.000	0.0852	1.178	2.112	0.0453	0.0166	0.0287	0.0812	0.0261	0.0552	-0.0359	-0.0095	-0.0265	0.5314	0.49	
80	394+00.000	396+46.150	0.0466	0.644	1.155	0.0248	0.0091	0.0157	0.0444	0.0143	0.0302	-0.0197	-0.0052	-0.0145	0.5314	0.49	
81	396+46.150	397+00.000	0.0102	0.141	0.253	0.0054	0.0020	0.0034	0.0097	0.0031	0.0066	-0.0043	-0.0011	-0.0032	0.5314	0.49	
82	397+00.000	399+00.000	0.0379	0.576	1.122	0.0221	0.0083	0.0139	0.0432	0.0139	0.0293	-0.0210	-0.0056	-0.0154	0.5847	0.54	
83	399+00.000	405+75.410	0.1279	1.768	3.170	0.0680	0.0249	0.0430	0.1219	0.0391	0.0828	-0.0539	-0.0142	-0.0398	0.5314	0.49	
84	405+75.410	406+00.000	0.0047	0.056	0.092	0.0022	0.0008	0.0014	0.0035	0.0011	0.0024	-0.0014	-0.0004	-0.0010	0.4646	0.43	
85	406+00.000	407+00.000	0.0189	0.254	0.446	0.0098	0.0036	0.0062	0.0172	0.0055	0.0116	-0.0074	-0.0019	-0.0054	0.5164	0.48	
86	407+00.000	443+25.000	0.6866	25.399	13.526	0.9769	0.4312	0.5456	0.5202	0.1670	0.3532	0.4567	0.2642	0.1924	1.4229	1.31	
87	443+25.000	445+50.000	0.0426	0.515	0.840	0.0198	0.0071	0.0127	0.0323	0.0104	0.0219	-0.0125	-0.0032	-0.0092	0.4646	0.43	
88	445+50.000	452+50.000	0.1326	4.452	2.612	0.1712	0.1044	0.0669	0.1005	0.0322	0.0682	0.0708	0.0721	-0.0013	1.2917	1.19	
89	452+50.000	459+00.000	0.1231	1.487	2.425	0.0572	0.0206	0.0366	0.0933	0.0299	0.0633	-0.0361	-0.0094	-0.0267	0.4646	0.43	
90	459+00.000	460+00.000	0.0189	0.254	0.446	0.0098	0.0036	0.0062	0.0172	0.0055	0.0116	-0.0074	-0.0019	-0.0054	0.5164	0.48	
91	460+00.000	460+58.580	0.0111	0.134	0.219	0.0052	0.0019	0.0033	0.0084	0.0027	0.0057	-0.0033	-0.0008	-0.0024	0.4646	0.43	
92	460+58.580	485+61.230	0.4740	8.577	9.338	0.3299	0.0899	0.2399	0.3592	0.1153	0.2439	-0.0293	-0.0253	-0.0039	0.6959	0.64	
93	485+61.230	503+00.000	0.3293	6.829	6.488	0.2627	0.0647	0.1979	0.2495	0.0801	0.1694	0.0131	-0.0154	0.0285	0.7976	0.74	
94	503+00.000	507+00.000	0.0758	3.766	1.492	0.1448	0.0174	0.1275	0.0574	0.0184	0.0390	0.0874	-0.0010	0.0885	1.9120	1.76	
95	507+00.000	508+00.000	0.0189	0.217	0.344	0.0084	0.0030	0.0054	0.0132	0.0042	0.0090	-0.0049	-0.0013	-0.0036	0.4416	0.41	
96	508+00.000	508+08.240	0.0016	0.018	0.028	0.0007	0.0002	0.0004	0.0011	0.0003	0.0007	-0.0004	-0.0001	-0.0003	0.4416	0.41	
97	508+08.240	510+30.000	0.0420	0.482	0.762	0.0185	0.0066	0.0119	0.0293	0.0094	0.0199	-0.0108	-0.0028	-0.0080	0.4416	0.41	
98	510+30.000	512+00.000	0.0322	0.389	0.634	0.0150	0.0054	0.0096	0.0244	0.0078	0.0166	-0.0094	-0.0025	-0.0070	0.4646	0.43	
463/SD38 (v1)	512+00.000			87.655	169.483	3.3714	1.6033	1.7681	6.5186	2.8095	3.7091	-3.1472	-1.2062	-1.9410			0.88
99	512+00.000	513+00.000	0.0189	0.626	1.666	0.0241	0.0095	0.0145	0.0641	0.0206	0.0435	-0.0400	-0.0110	-0.0290	1.2714	0.33	
100	513+00.000	515+00.000	0.0379	1.092	2.395	0.0420	0.0161	0.0259	0.0921	0.0296	0.0626	-0.0501	-0.0135	-0.0366	1.1086	0.29	
101	515+00.000	520+00.000	0.0947	2.689	5.796	0.1034	0.0394	0.0640	0.2229	0.0716	0.1514	-0.1195	-0.0322	-0.0873	1.0920	0.28	
102	520+00.000	520+49.150	0.0093	0.308	0.819	0.0118	0.0047	0.0071	0.0315	0.0101	0.0214	-0.0197	-0.0054	-0.0142	1.2714	0.33	
103	520+49.150	521+00.000	0.0096	0.343	1.049	0.0132	0.0054	0.0078	0.0403	0.0130	0.0274	-0.0271	-0.0076	-0.0195	1.3705	0.36	
104	521+00.000	523+38.600	0.0452	1.409	3.425	0.0542	0.0211	0.0331	0.1317	0.0423	0.0895	-0.0776	-0.0212	-0.0564	1.1991	0.31	
105	523+38.600	524+00.000	0.0116	0.362	0.881	0.0139	0.0054	0.0085	0.0339	0.0109	0.0230	-0.0200	-0.0054	-0.0145	1.1991	0.31	
106	524+00.000	525+00.000	0.0189	0.675	2.063	0.0260	0.0105	0.0154	0.0793	0.0255	0.0539	-0.0534	-0.0149	-0.0384	1.3705	0.36	
Main Ave/SD38 (v1)	524+50.000			42.110	132.778	1.6196	0.6778	0.9418	5.1069	2.2011	2.9058	-3.4872	-1.5232	-1.9640			0.37
107	525+00.000	525+18.580	0.0035	0.110	0.267	0.0042	0.0016	0.0026	0.0103	0.0033	0.0070	-0.0060	-0.0016	-0.0044	1.1991	0.31	
108	525+18.580	528+00.000	0.0533	1.662	4.040	0.0639	0.0249	0.0390	0.1554	0.0499	0.1055	-0.0915	-0.0250	-0.0665	1.1991	0.31	
109	528+00.000	529+00.000	0.0189	0.675	2.063	0.0260	0.0105	0.0154	0.0793	0.0255	0.0539	-0.0534	-0.0149	-0.0384	1.3705	0.36	
110	529+00.000	539+00.000	0.1894	13.262	14.355	0.5101	0.1129	0.3971	0.5521	0.1772	0.3749	-0.0420	-0.0643	0.0223	2.6933	0.70	
111	539+00.000	539+50.000	0.0095	0.299	0.742	0.0115	0.0045	0.0070	0.0285	0.0092	0.0194	-0.0170	-0.0047	-0.0124	1.2152	0.32	
112	539+50.000	540+00.000	0.0095	0.299	0.742	0.0115	0.0045	0.0070	0.0285	0.0092	0.0194	-0.0170	-0.0047	-0.0124	1.2152	0.32	
113	540+00.000	540+50.000	0.0095	0.299	0.742	0.0115	0.0045	0.0070	0.0285	0.0092	0.0194	-0.0170	-0.0047	-0.0124	1.2152	0.32	
114	540+50.000	540+74.370	0.0046	0.165	0.503	0.0063	0.0026	0.0038	0.0193	0.0062	0.0131	-0.0130	-0.0036	-0.0094	1.3705	0.36	
115	540+74.370	541+00.000	0.0049	0.161	0.427	0.0062	0.0024	0.0037	0.0164	0.0053	0.0111	-0.0102	-0.0028	-0.0074	1.2714	0.33	
116	541+00.000	541+50.000	0.0095	0.313	0.833	0.0120	0.0048	0.0073	0.0320	0.0103	0.0218	-0.0200	-0.0055	-0.0145	1.2714	0.33	
Vandemark/SD38 (v1)	541+50.000			28.334	74.904	1.0898	0.5033	0.5865	2.8809	1.2417	1.6393	-1.7912	-0.7384	-1.0527			0.27
117	541+50.000	541+70.000	0.0038	0.125	0.333	0.0048	0.0019	0.0029	0.0128	0.0041	0.0087	-0.0080	-0.0022	-0.0058	1.2714	0.33	

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
118	541+70.000	542+30.000	0.0114	0.376	1.000	0.0144	0.0057	0.0087	0.0384	0.0123	0.0261	-0.0240	-0.0066	-0.0174	1.2714	0.33	
119	542+30.000	542+64.000	0.0064	0.186	0.407	0.0071	0.0027	0.0044	0.0157	0.0050	0.0106	-0.0085	-0.0023	-0.0062	1.1086	0.29	
120	542+64.000	543+34.000	0.0133	0.382	0.838	0.0147	0.0056	0.0091	0.0322	0.0104	0.0219	-0.0175	-0.0047	-0.0128	1.1086	0.29	
121	543+34.000	544+00.000	0.0125	0.360	0.790	0.0139	0.0053	0.0086	0.0304	0.0098	0.0206	-0.0165	-0.0045	-0.0121	1.1086	0.29	
122	544+00.000	545+00.000	0.0189	0.566	1.300	0.0218	0.0084	0.0134	0.0500	0.0160	0.0339	-0.0282	-0.0076	-0.0206	1.1497	0.30	
123	545+00.000	548+23.000	0.0612	1.829	4.198	0.0703	0.0271	0.0432	0.1615	0.0518	0.1096	-0.0911	-0.0247	-0.0664	1.1497	0.30	
124	548+23.000	553+70.000	0.1036	10.151	7.109	0.3904	0.2627	0.1277	0.2734	0.0878	0.1857	0.1170	0.1750	-0.0580	3.7686	0.98	
125	553+70.000	554+00.000	0.0057	0.194	0.542	0.0074	0.0030	0.0045	0.0209	0.0067	0.0142	-0.0134	-0.0037	-0.0097	1.3100	0.34	
126	554+00.000	554+20.000	0.0038	0.129	0.361	0.0050	0.0020	0.0030	0.0139	0.0045	0.0094	-0.0089	-0.0025	-0.0065	1.3100	0.34	
127	554+20.000	560+00.000	0.1098	3.284	7.538	0.1263	0.0487	0.0776	0.2899	0.0931	0.1969	-0.1636	-0.0444	-0.1193	1.1497	0.30	
128	560+00.000	562+58.560	0.0490	1.464	3.360	0.0563	0.0217	0.0346	0.1292	0.0415	0.0878	-0.0729	-0.0198	-0.0532	1.1497	0.30	
129	562+58.560	564+00.000	0.0268	0.801	1.838	0.0308	0.0119	0.0189	0.0707	0.0227	0.0480	-0.0399	-0.0108	-0.0291	1.1497	0.30	
130	564+00.000	565+00.000	0.0189	0.566	1.300	0.0218	0.0084	0.0134	0.0500	0.0160	0.0339	-0.0282	-0.0076	-0.0206	1.1497	0.30	
131	565+00.000	565+77.000	0.0146	0.494	1.133	0.0190	0.0073	0.0117	0.0436	0.0140	0.0296	-0.0246	-0.0067	-0.0179	1.3020	0.30	
132	565+77.000	566+10.000	0.0063	0.241	0.675	0.0093	0.0037	0.0056	0.0260	0.0083	0.0176	-0.0167	-0.0046	-0.0121	1.4835	0.34	
2nd/SD38 (v2)	566+00.000			51.588	119.976	1.9842	0.7408	1.2433	4.6145	1.9888	2.6256	-2.6303	-1.2480	-1.3823			0.41
133	566+10.000	566+50.000	0.0076	0.292	0.819	0.0112	0.0045	0.0067	0.0315	0.0101	0.0214	-0.0203	-0.0056	-0.0146	1.4835	0.34	
134	566+50.000	569+37.000	0.0544	17.818	4.224	0.6853	0.2643	0.4210	0.1625	0.0522	0.1103	0.5228	0.2121	0.3107	12.6074	2.89	
135	569+37.000	569+70.000	0.0063	0.228	0.581	0.0088	0.0034	0.0053	0.0223	0.0072	0.0152	-0.0136	-0.0037	-0.0098	1.4018	0.32	
West Central School/SD38 (v2)	569+50.000			18.933	73.624	0.7282	0.3383	0.3899	2.8317	1.1752	1.6565	-2.1035	-0.8368	-1.2667			0.16
136	569+70.000	570+00.000	0.0057	0.192	0.442	0.0074	0.0029	0.0045	0.0170	0.0055	0.0115	-0.0096	-0.0026	-0.0070	1.3020	0.30	
137	570+00.000	575+00.000	0.0947	3.160	7.122	0.1215	0.0467	0.0748	0.2739	0.0879	0.1860	-0.1524	-0.0412	-0.1112	1.2834	0.29	
138	575+00.000	579+50.000	0.0852	2.885	6.623	0.1110	0.0428	0.0682	0.2547	0.0818	0.1730	-0.1438	-0.0390	-0.1048	1.3020	0.30	
139	579+50.000	579+70.000	0.0038	0.146	0.409	0.0056	0.0022	0.0034	0.0157	0.0051	0.0107	-0.0101	-0.0028	-0.0073	1.4835	0.34	
140	579+70.000	580+10.000	0.0076	0.292	0.819	0.0112	0.0045	0.0067	0.0315	0.0101	0.0214	-0.0203	-0.0056	-0.0146	1.4835	0.34	
All Segments			7.7398	213.597	230.845	8.2153	3.0105	5.2047	8.8786	2.8500	6.0286	-0.6634	0.1605	-0.8239	1.0614	0.68	
All Intersections				263.144	631.248	10.1209	4.4358	5.6852	24.2788	10.4147	13.8641	-14.1579	-5.9790	-8.1789			0.39
Total			7.7398	476.741	862.093	18.3362	7.4463	10.8899	33.1574	13.2648	19.8927	-14.8212	-5.8185	-9.0028	2.3691		

Table 8. Expected Crash Frequencies and Rates by Horizontal Design Element (Section 1)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)
Tangent	171+44.000	174+52.690	0.0585	0.720	1.188	0.0277	0.0100	0.0177	0.0457	0.0147	0.0310	-0.0180	-0.0047	-0.0133	0.4733	0.44
Simple Curve 1	174+52.690	178+85.250	0.0819	1.254	2.459	0.0482	0.0180	0.0302	0.0946	0.0304	0.0642	-0.0464	-0.0123	-0.0340	0.5886	0.54
Tangent	178+85.250	230+66.250	0.9812	14.723	19.390	0.5663	0.1684	0.3979	0.7458	0.2394	0.5064	-0.1795	-0.0710	-0.1085	0.5771	0.53
Simple Curve 2	230+66.250	245+14.280	0.2742	6.908	6.555	0.2657	0.1459	0.1198	0.2521	0.0809	0.1712	0.0136	0.0649	-0.0513	0.9688	0.89
Tangent	245+14.280	263+22.600	0.3425	10.496	6.937	0.4037	0.0685	0.3352	0.2668	0.0856	0.1812	0.1369	-0.0172	0.1541	1.1787	1.09
Simple Curve 3	263+22.600	272+66.740	0.1788	2.351	4.061	0.0904	0.0329	0.0575	0.1562	0.0501	0.1060	-0.0657	-0.0172	-0.0485	0.5057	0.47
Tangent	272+66.740	296+96.470	0.4602	8.432	9.130	0.3243	0.0823	0.2420	0.3511	0.1127	0.2384	-0.0268	-0.0304	0.0036	0.7047	0.65
Simple Curve 4	296+96.470	296+96.520	0.0000	0.000	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0000	-0.0000	-0.0000	0.4646	0.43
Tangent	296+96.520	329+81.740	0.6222	7.516	12.258	0.2891	0.1040	0.1851	0.4715	0.1513	0.3201	-0.1824	-0.0474	-0.1350	0.4646	0.43
Simple Curve 5	329+81.740	335+39.960	0.1057	8.323	2.828	0.3201	0.0246	0.2956	0.1088	0.0349	0.0738	0.2114	-0.0103	0.2217	3.0280	2.79
Tangent	335+39.960	369+14.990	0.6392	13.471	12.739	0.5181	0.1961	0.3220	0.4900	0.1573	0.3327	0.0282	0.0389	-0.0107	0.8106	0.75
Simple Curve 6	369+14.990	379+62.690	0.1984	6.109	5.131	0.2350	0.1376	0.0974	0.1973	0.0633	0.1340	0.0376	0.0742	-0.0366	1.1841	1.09
Tangent	379+62.690	385+22.970	0.1061	4.133	2.091	0.1590	0.1024	0.0566	0.0804	0.0258	0.0546	0.0785	0.0766	0.0020	1.4979	1.38
Simple Curve 7	385+22.970	405+75.410	0.3887	5.424	9.817	0.2086	0.0767	0.1319	0.3776	0.1212	0.2564	-0.1690	-0.0445	-0.1245	0.5366	0.50
Tangent	405+75.410	520+49.150	2.1731	57.544	50.368	2.2132	0.8301	1.3832	1.9372	0.6218	1.3154	0.2760	0.2082	0.0678	1.0185	0.88
Simple Curve 8	520+49.150	540+74.370	0.3836	19.560	30.871	0.7523	0.2085	0.5438	1.1874	0.3811	0.8062	-0.4350	-0.1726	-0.2624	1.9614	0.51
Tangent	540+74.370	580+10.000	0.7454	46.632	55.023	1.7936	0.8047	0.9889	2.1163	0.6793	1.4370	-0.3227	0.1253	-0.4481	2.4062	0.58

Table 9. Predicted Crash Frequencies by Year (Section 1)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2025	21.56	8.58	39.798	12.98	60.202
2026	23.15	9.22	39.843	13.93	60.157
2027	24.72	9.86	39.881	14.86	60.119
2028	26.28	10.49	39.913	15.79	60.087
2029	27.83	11.12	39.940	16.71	60.060
2030	28.45	11.37	39.948	17.09	60.052
2031	29.08	11.62	39.955	17.46	60.045
2032	29.71	11.87	39.963	17.84	60.037
2033	30.34	12.13	39.971	18.21	60.029
2034	30.97	12.38	39.978	18.59	60.022
2035	31.61	12.64	39.985	18.97	60.015
2036	32.24	12.89	39.992	19.35	60.008
2037	32.88	13.15	39.999	19.73	60.001
2038	33.52	13.41	40.006	20.11	59.994
2039	34.16	13.67	40.012	20.49	59.988
2040	34.80	13.93	40.019	20.87	59.981
2041	35.57	14.24	40.027	21.33	59.973
2042	36.35	14.55	40.035	21.80	59.965
2043	37.12	14.87	40.043	22.26	59.957
2044	37.90	15.18	40.051	22.72	59.949
2045	38.68	15.49	40.058	23.19	59.942
2046	39.47	15.81	40.066	23.65	59.934
2047	40.25	16.13	40.073	24.12	59.927
2048	41.03	16.45	40.080	24.59	59.920
2049	41.82	16.76	40.087	25.05	59.913
2050	42.61	17.09	40.094	25.53	59.906
Total	862.09	344.88	40.005	517.21	59.995
Average	33.16	13.27	40.005	19.89	59.995

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 10. Expected Crash Frequencies by Year (Section 1)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2025	11.92	4.82	40.399	7.11	59.596
2026	12.80	5.18	40.445	7.62	59.551
2027	13.67	5.53	40.483	8.14	59.514
2028	14.53	5.89	40.516	8.64	59.482
2029	15.39	6.24	40.543	9.15	59.455
2030	15.73	6.38	40.551	9.35	59.447
2031	16.08	6.52	40.559	9.56	59.440
2032	16.43	6.67	40.567	9.77	59.432
2033	16.78	6.81	40.574	9.97	59.425
2034	17.13	6.95	40.582	10.18	59.418
2035	17.48	7.09	40.589	10.38	59.410
2036	17.83	7.24	40.596	10.59	59.404
2037	18.18	7.38	40.603	10.80	59.397
2038	18.54	7.53	40.610	11.01	59.390
2039	18.89	7.67	40.617	11.22	59.384
2040	19.25	7.82	40.624	11.43	59.377
2041	19.67	7.99	40.632	11.68	59.369
2042	20.10	8.17	40.640	11.93	59.361
2043	20.53	8.34	40.648	12.18	59.353
2044	20.96	8.52	40.656	12.44	59.345
2045	21.39	8.70	40.664	12.69	59.338
2046	21.82	8.88	40.671	12.95	59.330
2047	22.26	9.05	40.678	13.20	59.323
2048	22.69	9.23	40.686	13.46	59.316
2049	23.13	9.41	40.693	13.72	59.309
2050	23.56	9.59	40.700	13.97	59.302
Total	476.74	193.60	40.610	283.14	59.390
Average	18.34	7.45	40.610	10.89	59.390

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 11. Comparing Predicted and Expected Crashes for the Evaluation Period (Section 1)

Scope	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
Predicted	862.09	344.88	40.005	517.21	59.995
Expected	476.74	193.60	40.610	283.14	59.390
Expected - Predicted	-385.35	-151.28		-234.07	
Percent Difference	-80.83	-78.14		-82.67	

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 12. Expected Crash Type Distribution (Section 1)

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	2.97	0.6	24.90	5.2	25.84	5.4
Highway Segment	Collision with Bicycle	0.31	0.1	0.14	0.0	0.43	0.1
Highway Segment	Other Single-vehicle Collision	0.55	0.1	3.92	0.8	4.49	0.9
Highway Segment	Overturned	2.90	0.6	2.03	0.4	5.34	1.1
Highway Segment	Collision with Pedestrian	0.55	0.1	0.14	0.0	0.64	0.1
Highway Segment	Run Off Road	42.66	9.0	68.34	14.3	111.28	23.4
Highway Segment	Total Single Vehicle Crashes	49.94	10.5	99.46	20.9	148.02	31.1
Highway Segment	Angle Collision	7.91	1.7	9.74	2.0	18.16	3.8
Highway Segment	Head-on Collision	2.66	0.6	0.41	0.1	3.42	0.7
Highway Segment	Other Multiple-vehicle Collision	2.04	0.4	4.06	0.9	5.77	1.2
Highway Segment	Rear-end Collision	12.91	2.7	16.51	3.5	30.33	6.4
Highway Segment	Sideswipe	2.97	0.6	5.14	1.1	7.90	1.7
Highway Segment	Total Multiple Vehicle Crashes	28.49	6.0	35.86	7.5	65.57	13.8
Highway Segment	Total Highway Segment Crashes	78.43	16.5	135.32	28.4	213.60	44.8
Intersection	Collision with Animal	0.71	0.1	2.22	0.5	2.84	0.6
Intersection	Collision with Bicycle	0.12	0.0	0.15	0.0	0.26	0.1
Intersection	Other Single-vehicle Collision	0.54	0.1	1.61	0.3	2.10	0.4
Intersection	Overturned	0.86	0.2	0.63	0.1	1.50	0.3
Intersection	Collision with Pedestrian	0.12	0.0	0.15	0.0	0.26	0.1
Intersection	Run Off Road	12.42	2.6	22.60	4.7	34.98	7.3
Intersection	Total Single Vehicle Crashes	14.77	3.1	27.36	5.7	41.97	8.8
Intersection	Angle Collision	58.58	12.3	50.48	10.6	108.83	22.8
Intersection	Head-on Collision	7.15	1.5	3.79	0.8	10.81	2.3
Intersection	Other Multiple-vehicle Collision	4.93	1.0	5.42	1.1	10.33	2.2
Intersection	Rear-end Collision	24.76	5.2	39.65	8.3	64.53	13.5
Intersection	Sideswipe	5.15	1.1	21.12	4.4	26.48	5.6
Intersection	Total Multiple Vehicle Crashes	100.56	21.1	120.46	25.3	220.99	46.4
Intersection	Total Intersection Crashes	115.33	24.2	147.81	31.0	262.95	55.2
	Total Crashes	193.76	40.7	283.14	59.4	476.55	100.0

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 13. Evaluation Message

Start Location (Sta. ft)	End Location (Sta. ft)	Message
580+00.000	580+00.000	Warning: for intersection #3 (580+00.000 to 580+00.000), SE SD-38 at 580+00.000 has more than one lane exiting. No intersection crash prediction computed.
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,560 vpd) for 2018 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,560 vpd) for 2019 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,560 vpd) for 2020 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,560 vpd) for 2021 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,560 vpd) for 2022 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
580+00.000	580+00.000	Warning: for intersection #3 (580+00.000 to 580+00.000), SE SD-38 at 580+00.000 has more than one lane exiting. No intersection crash prediction computed.
187+50.000	187+50.000	Warning: for intersection #5 (187+50.000 to 187+50.000), minor road traffic volume (3,503 vpd) for 2049 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
187+50.000	187+50.000	Warning: for intersection #5 (187+50.000 to 187+50.000), minor road traffic volume (3,570 vpd) for 2050 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,802 vpd) for 2025 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,882 vpd) for 2026 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,963 vpd) for 2027 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,044 vpd) for 2028 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,125 vpd) for 2029 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,221 vpd) for 2030 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,318 vpd) for 2031 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,415 vpd) for 2032 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,512 vpd) for 2033 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST

Start Location (Sta. ft)	End Location (Sta. ft)	Message
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,609 vpd) for 2034 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,705 vpd) for 2035 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,802 vpd) for 2036 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,899 vpd) for 2037 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,996 vpd) for 2038 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,093 vpd) for 2039 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,190 vpd) for 2040 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,308 vpd) for 2041 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,427 vpd) for 2042 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,545 vpd) for 2043 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,664 vpd) for 2044 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,782 vpd) for 2045 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,901 vpd) for 2046 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (6,019 vpd) for 2047 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (6,138 vpd) for 2048 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (6,256 vpd) for 2049 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (6,375 vpd) for 2050 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST

Interactive Highway Safety Design Model

Crash Prediction Evaluation Report

June 10, 2024

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Report Overview

Report Generated: Jun 10, 2024 9:25 AM
Report Template: System: Single Page, 508 Compliant [System] (mlcpm5, Dec 5, 2019 2:16 PM)

Evaluation Date: Mon Jun 10 09:24:09 CDT 2024
IHSDM Version: v17.0.0 (Sep 22, 2021)
Crash Prediction Module: v12.0.0 (Sep 22, 2021)

User Name: naveen.mallipaddi
Organization Name:
Phone:
E-Mail:

Project Title: SD-38_Build_Option2_I90EBRamp_I
Project Comment: Created Mon Mar 27 16:47:43 CDT 2023
Project Unit System: U.S. Customary

Highway Title: SD-38
Highway Comment: Created Mon Mar 27 16:49:47 CDT 2023
Highway Version: 20

Evaluation Title: Evaluation 55
Evaluation Comment: Created Mon Jun 10 09:16:50 CDT 2024

Minimum Location: 585+00.000
Maximum Location: 974+11.000

Policy for Superelevation: AASHTO 2011 U.S. Customary
Calibration: HSM Configuration
Crash Distribution: HSM Configuration
Model/CMF: HSM Configuration

First Year of Analysis: 2025
Last Year of Analysis: 2050
Empirical-Bayes Analysis: Site-Specific
Highway with Crash History: SD-38
Highway with Crash History Comment: Created Mon Mar 27 16:49:47 CDT 2023
Highway with Crash History Version: 20
First Year of Observed Crashes: 2018
Last Year of Observed Crashes: 2022

Disclaimer Regarding Crash Prediction Method

IMPORTANT NOTICE ABOUT COMPARING RESULTS FROM HIGHWAY SAFETY MANUAL FIRST EDITION (2010) MODELS TO RESULTS FROM NEW MODELS DEVELOPED UNDER NCHRP PROJECTS 17-70, 17-58, AND 17-68

Since the publication of the Highway Safety Manual - First Edition (HSM-1), in 2010 by the American Association of State Highway and Transportation Officials (AASHTO), multiple research efforts have been undertaken through the National Cooperative Highway Research Program (NCHRP) to develop safety performance models for road segment and intersection facility types that were not initially reflected in the HSM-1, in order to expand the breadth and depth of the HSM in the future.

The IHSDM Crash Prediction Module (CPM) is intended as a faithful implementation of HSM Part C predictive methods. As NCHRP projects to develop new predictive methods for the HSM are completed, FHWA works to incorporate the new methods into IHSDM, sometimes in advance of publication in the HSM. The following new crash predictive methods have been accepted by NCHRP project panels and incorporated into IHSDM, while pending AASHTO's approval for incorporation into a future edition of the HSM:

- Roundabouts: completed in 2018 under NCHRP Project 17-70, the new methods will provide improved outcomes for the safety analysis of roundabouts.
- 6+ lane and one-way urban/suburban arterials (including models for segments and intersections): completed under NCHRP Project 17-58.
- Intersection crash prediction methods for some intersection configurations and traffic control types not currently addressed in the HSM (e.g., all-way stop; rural 3-leg signalized; 3-leg stop-controlled where the major leg turns; urban 5-leg signalized; urban high-speed intersections): completed in 2021 under NCHRP Project 17-68.

However, in the absence of local calibration factors (see HSM-1 Part C, Appendix A for guidance on calibration of the predictive models), it is neither appropriate nor advisable to directly compare the results from new models (from NCHRP Projects 17-58, 17-68, and 17-70) to results from HSM-1 models, as the models were not calibrated to the same base state data sets, and consequently can produce unexpected results. If local calibration factors are available and applied to both new models and HSM-1 models, then it may be appropriate to directly compare the results.*[Note: Work being performed under NCHRP Project 17-72 (Update of Crash Modification Factors for the Highway Safety Manual) is expected to re-calibrate many of the old (HSM-1) and new (e.g., NCHRP 17-70) models to data from a single (or small number of) states, that would allow results from all models to be directly compared.]*

The models produced for NCHRP Project 17-70 have independent value in terms of informing the design of a roundabout and assessing the effects of different design characteristics on the expected safety performance of a roundabout.

The HSM-1 interim method previously included in IHSDM for evaluating roundabouts on urban/suburban arterials (i.e., evaluating an existing intersection and then applying a Crash Modification Factor for replacing the existing intersection with a roundabout) has been deactivated in IHSDM, to minimize any confusion with the new roundabout methodology.

Section Types

Section 3 Evaluation

Section: Section 3
Evaluation Start Location: 585+00.000
Evaluation End Location: 948+50.000
Area Type: Rural
Functional Class: Arterial
Type of Alignment: Undivided/Divided Multilane
Model Category: Rural, Multilane
Calibration Factor: 3ST=1.0; 4D=1.0; 4ST=1.0; 4U=1.0; RT_ST_FI=1.0; RT_ST_PDO=1.0;

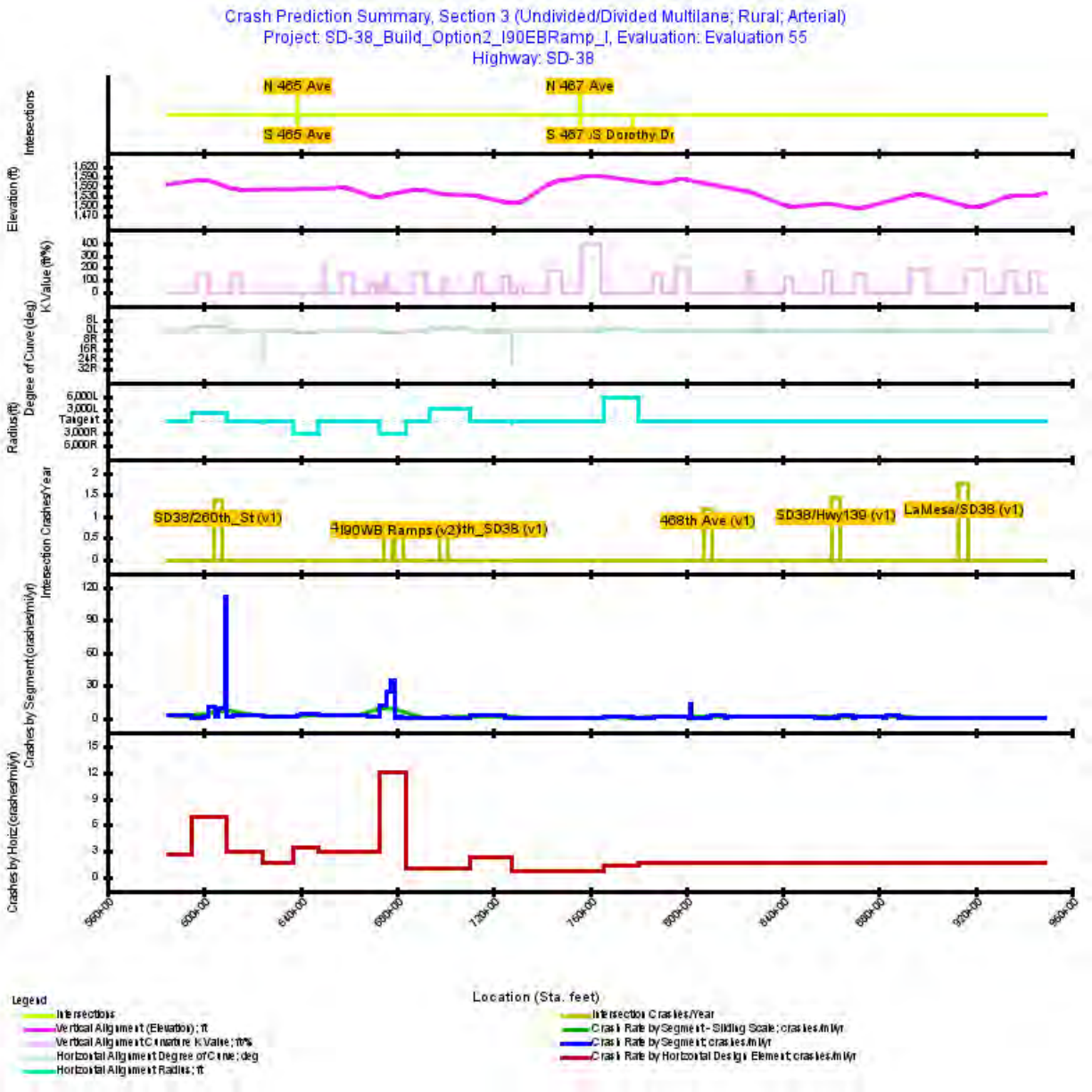

Figure 1. Crash Prediction Summary (Section 3)

Table 1. Observed Crashes Used in the Evaluation (Section 3)

Year	Observed Crashes	Total Crashes Used	FI Crashes	FI no/C Crashes	PDO Crashes
2018	8	8	6	5	2
2019	10	10	4	0	6
2020	7	7	3	2	4
2021	9	9	5	2	4
2022	9	9	5	1	4
All Years	43 [1]	43	23	10	20

Footnotes

[1] Note: Observed crash data that does not comply with the associated CPM model requirements may not be used in EB processing.

Table 2. Evaluation Highway - Homogeneous Segments (Section 3)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
1	Rural Multi-Lane Segment Four-lane Undivided	585+00.000	594+84.940	984.94	0.1865	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
2	Rural Multi-Lane Segment Four-lane Undivided	594+84.940	600+00.000	515.06	0.0975	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
3	Rural Multi-Lane Segment Four-lane Undivided	600+00.000	601+00.000	100.00	0.0189	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
4	Rural Multi-Lane Segment Four-lane Undivided	601+00.000	602+00.000	100.00	0.0189	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
5	Rural Multi-Lane Segment Four-lane Undivided	602+00.000	605+00.000	300.00	0.0568	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
6	Rural Multi-Lane Segment Four-lane Undivided	605+00.000	605+60.000	60.00	0.0114	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	0.00	0.00	None	0.00	false	false	0:1	0:1
7	Rural Multi-Lane Segment Four-lane Undivided	605+60.000	605+70.000	10.00	0.0019	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
8	Rural Multi-Lane Segment Four-lane Undivided	605+70.000	605+75.000	5.00	0.0009	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
9	Rural Multi-Lane Segment Four-lane Undivided	605+75.000	609+00.000	325.00	0.0616	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
10	Rural Multi-Lane Segment Four-lane Undivided	609+00.000	609+21.930	21.93	0.0042	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
11	Rural Multi-Lane Segment Four-lane Undivided	609+21.930	611+40.000	218.07	0.0413	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
12	Rural Multi-Lane Segment Four-lane Undivided	611+40.000	612+50.000	110.00	0.0208	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
13	Rural Multi-Lane Segment Four-lane Undivided	612+50.000	624+64.530	1,214.53	0.2300	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
14	Rural Multi-Lane Segment Four-lane Undivided	624+64.530	636+92.820	1,228.29	0.2326	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
15	Rural Multi-Lane Segment Four-lane Undivided	636+92.820	639+00.000	207.18	0.0392	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
16	Rural Multi-Lane Segment Four-lane Undivided	639+00.000	640+00.000	100.00	0.0189	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
17	Rural Multi-Lane Segment Four-lane Undivided	640+00.000	647+26.050	726.05	0.1375	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
18	Rural Multi-Lane Segment Four-lane Undivided	647+26.050	667+80.000	2,053.95	0.3890	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
19	Rural Multi-Lane Segment Four-lane Undivided	667+80.000	668+80.000	100.00	0.0189	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	0.00	0.00	None	0.00	false	false	0:1	0:1
20	Rural Multi-Lane Segment Four-lane Undivided	668+80.000	672+86.110	406.11	0.0769	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
21	Rural Multi-Lane Segment Four-lane Undivided	672+86.110	676+00.000	313.89	0.0594	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
22	Rural Multi-Lane Segment Four-lane Undivided	676+00.000	677+50.000	150.00	0.0284	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	0.00	8.00	0.00	None	0.00	false	false	0:1	0:1
23	Rural Multi-Lane Segment Four-lane Undivided	677+50.000	679+00.000	150.00	0.0284	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
24	Rural Multi-Lane Segment Four-lane Undivided	679+00.000	680+80.000	180.00	0.0341	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
25	Rural Multi-Lane Segment Four-lane Undivided	680+80.000	680+90.000	10.00	0.0019	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	0.00	8.00	0.00	None	0.00	false	false	0:1	0:1
26	Rural Multi-Lane Segment Four-lane Undivided	680+90.000	682+20.000	130.00	0.0246	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	0.00	8.00	0.00	None	0.00	false	false	0:1	0:1
27	Rural Multi-Lane Segment Four-lane Undivided	682+20.000	683+82.710	162.71	0.0308	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
28	Rural Multi-Lane Segment Four-lane Undivided	683+82.710	691+50.000	767.29	0.1453	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
29	Rural Multi-Lane Segment Four-lane Undivided	691+50.000	692+70.000	120.00	0.0227	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
30	Rural Multi-Lane Segment Four-lane Undivided	692+70.000	693+85.010	115.01	0.0218	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
31	Rural Multi-Lane Segment Four-lane Undivided	693+85.010	698+70.000	484.99	0.0919	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
32	Rural Multi-Lane Segment Four-lane Undivided	698+70.000	699+00.000	30.00	0.0057	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	0.00	8.00	0.00	None	0.00	false	false	0:1	0:1
33	Rural Multi-Lane Segment Four-lane Undivided	699+00.000	699+20.000	20.00	0.0038	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
34	Rural Multi-Lane Segment Four-lane Undivided	699+20.000	700+40.000	120.00	0.0227	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
35	Rural Multi-Lane Segment Four-lane Divided	700+40.000	700+50.000	10.00	0.0019	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	0.00	0.00	8.00	Traversable Median	8.00	false	false		
36	Rural Multi-Lane Segment Four-lane Divided	700+50.000	701+10.000	60.00	0.0114	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	0.00	8.00	Traversable Median	8.00	false	false		
37	Rural Multi-Lane Segment Four-lane Divided	701+10.000	702+00.000	90.00	0.0170	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	0.00	8.00	Non-Traversable Median	8.00	false	false		
38	Rural Multi-Lane Segment Four-lane Divided	702+00.000	702+50.000	50.00	0.0095	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	0.00	8.00	Non-Traversable Median	8.00	false	false		
39	Rural Multi-Lane Segment Four-lane Divided	702+50.000	707+00.000	450.00	0.0852	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
40	Rural Multi-Lane Segment Four-lane Divided	707+00.000	708+00.000	100.00	0.0189	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
41	Rural Multi-Lane Segment Four-lane Divided	708+00.000	708+80.000	80.00	0.0152	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
42	Rural Multi-Lane Segment Four-lane Divided	708+80.000	709+00.000	20.00	0.0038	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
43	Rural Multi-Lane Segment Four-lane Undivided	709+00.000	710+30.000	130.00	0.0246	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
44	Rural Multi-Lane Segment Four-lane Divided	710+30.000	710+47.850	17.85	0.0034	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
45	Rural Multi-Lane Segment Four-lane Divided	710+47.850	725+00.000	1,452.15	0.2750	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
46	Rural Multi-Lane Segment Four-lane Divided	725+00.000	727+52.350	252.35	0.0478	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
47	Rural Multi-Lane Segment Four-lane Divided	727+52.350	735+00.000	747.65	0.1416	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
48	Rural Multi-Lane Segment Four-lane Divided	735+00.000	755+50.000	2,050.00	0.3883	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
49	Rural Multi-Lane Segment Four-lane Undivided	755+50.000	756+90.000	140.00	0.0265	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
50	Rural Multi-Lane Segment Four-lane Divided	756+90.000	757+00.000	10.00	0.0019	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
51	Rural Multi-Lane Segment Four-lane Divided	757+00.000	763+30.000	630.00	0.1193	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
52	Rural Multi-Lane Segment Four-lane Divided	763+30.000	764+00.000	70.00	0.0133	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	11.50	Non-Traversable Median	11.50	false	false		
53	Rural Multi-Lane Segment Four-lane Divided	764+00.000	764+50.000	50.00	0.0095	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	17.50	Non-Traversable Median	17.50	false	false		
54	Rural Multi-Lane Segment Four-lane Divided	764+50.000	765+52.550	102.55	0.0194	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
55	Rural Multi-Lane Segment Four-lane Divided	765+52.550	777+80.000	1,227.45	0.2325	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
56	Rural Multi-Lane Segment Four-lane Undivided	777+80.000	778+80.000	100.00	0.0189	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
57	Rural Multi-Lane Segment Four-lane Divided	778+80.000	779+00.000	20.00	0.0038	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
58	Rural Multi-Lane Segment Four-lane Divided	779+00.000	780+45.930	145.93	0.0276	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
59	Rural Multi-Lane Segment Four-lane Divided	780+45.930	785+40.000	494.07	0.0936	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
60	Rural Multi-Lane Segment Four-lane Divided	785+40.000	785+50.000	10.00	0.0019	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
61	Rural Multi-Lane Segment Four-lane Divided	785+50.000	786+09.000	59.00	0.0112	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	11.54	Non-Traversable Median	11.54	false	false		
62	Rural Multi-Lane Segment Four-lane Divided	786+09.000	786+50.000	41.00	0.0078	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	17.54	Non-Traversable Median	17.54	false	false		
63	Rural Multi-Lane Segment Four-lane Divided	786+50.000	801+10.000	1,460.00	0.2765	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
64	Rural Multi-Lane Segment Four-lane Divided	801+10.000	801+61.000	51.00	0.0097	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	17.45	Non-Traversable Median	17.45	false	false		
65	Rural Multi-Lane Segment Four-lane Divided	801+61.000	802+30.000	69.00	0.0131	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	11.45	Non-Traversable Median	11.45	false	false		
66	Rural Multi-Lane Segment Four-lane Divided	802+30.000	802+40.000	10.00	0.0019	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
67	Rural Multi-Lane Segment Four-lane Divided	802+40.000	808+30.000	590.00	0.1117	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
68	Rural Multi-Lane Segment Four-lane Divided	808+30.000	808+80.000	50.00	0.0095	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
69	Rural Multi-Lane Segment Four-lane Undivided	808+80.000	809+00.000	20.00	0.0038	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
70	Rural Multi-Lane Segment Four-lane Undivided	809+00.000	809+60.000	60.00	0.0114	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
71	Rural Multi-Lane Segment Four-lane Divided	809+60.000	810+00.000	40.00	0.0076	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	0.00	0.00	8.00	Traversable Median	20.00	false	false		
72	Rural Multi-Lane Segment Four-lane Divided	810+00.000	810+20.000	20.00	0.0038	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
73	Rural Multi-Lane Segment Four-lane Divided	810+20.000	816+00.000	580.00	0.1098	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
74	Rural Multi-Lane Segment Four-lane Divided	816+00.000	816+70.000	70.00	0.0133	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	11.50	Non-Traversable Median	11.50	false	false		

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
75	Rural Multi-Lane Segment Four-lane Divided	816+70.000	817+20.000	50.00	0.0095	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	17.50	Non-Traversable Median	17.50	false	false		
76	Rural Multi-Lane Segment Four-lane Divided	817+20.000	853+70.000	3,650.00	0.6913	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
77	Rural Multi-Lane Segment Four-lane Divided	853+70.000	854+00.000	30.00	0.0057	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	18.36	Non-Traversable Median	18.36	false	false		
78	Rural Multi-Lane Segment Four-lane Divided	854+00.000	854+16.000	16.00	0.0030	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	15.85	Non-Traversable Median	15.85	false	false		
79	Rural Multi-Lane Segment Four-lane Divided	854+16.000	854+80.000	64.00	0.0121	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	11.49	Non-Traversable Median	11.49	false	false		
80	Rural Multi-Lane Segment Four-lane Divided	854+80.000	860+90.000	610.00	0.1155	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
81	Rural Multi-Lane Segment Four-lane Divided	860+90.000	861+85.000	95.00	0.0180	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
82	Rural Multi-Lane Segment Four-lane Undivided	861+85.000	862+00.000	15.00	0.0028	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	0.00	0.00	None	0.00	false	false	0:1	0:1
83	Rural Multi-Lane Segment Four-lane Undivided	862+00.000	862+50.000	50.00	0.0095	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	0.00	0.00	None	0.00	false	false	0:1	0:1
84	Rural Multi-Lane Segment Four-lane Undivided	862+50.000	862+60.000	10.00	0.0019	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
85	Rural Multi-Lane Segment Four-lane Divided	862+60.000	863+10.000	50.00	0.0095	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	8.00	Traversable Median	19.00	false	false		
86	Rural Multi-Lane Segment Four-lane Divided	863+10.000	869+00.000	590.00	0.1117	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	19.00	false	false		
87	Rural Multi-Lane Segment Four-lane Divided	869+00.000	869+70.000	70.00	0.0133	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	11.50	Non-Traversable Median	11.50	false	false		
88	Rural Multi-Lane Segment Four-lane Divided	869+70.000	870+20.000	50.00	0.0095	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	17.50	Non-Traversable Median	17.50	false	false		
89	Rural Multi-Lane Segment Four-lane Divided	870+20.000	881+80.000	1,160.00	0.2197	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
90	Rural Multi-Lane Segment Four-lane Divided	881+80.000	882+31.000	51.00	0.0097	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	17.45	Non-Traversable Median	17.45	false	false		
91	Rural Multi-Lane Segment Four-lane Divided	882+31.000	883+00.000	69.00	0.0131	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	11.45	Non-Traversable Median	11.45	false	false		
92	Rural Multi-Lane Segment Four-lane Divided	883+00.000	887+90.000	490.00	0.0928	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
93	Rural Multi-Lane Segment Four-lane Divided	887+90.000	888+20.000	30.00	0.0057	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
94	Rural Multi-Lane Segment Four-lane Undivided	888+20.000	889+30.000	110.00	0.0208	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
95	Rural Multi-Lane Segment Four-lane Divided	889+30.000	889+50.000	20.00	0.0038	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
96	Rural Multi-Lane Segment Four-lane Divided	889+50.000	894+50.000	500.00	0.0947	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
97	Rural Multi-Lane Segment Four-lane Divided	894+50.000	895+15.000	65.00	0.0123	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	11.55	Non-Traversable Median	11.55	false	false		
98	Rural Multi-Lane Segment Four-lane Divided	895+15.000	895+60.000	45.00	0.0085	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	17.55	Non-Traversable Median	17.55	false	false		
99	Rural Multi-Lane Segment Four-lane Divided	895+60.000	898+00.000	240.00	0.0455	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
100	Rural Multi-Lane Segment Four-lane Divided	898+00.000	906+70.000	870.00	0.1648	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	11.50	11.50	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
101	Rural Multi-Lane Segment Four-lane Divided	906+70.000	907+21.000	51.00	0.0097	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	11.50	11.50	8.00	8.00	17.45	Non-Traversable Median	17.45	false	false		
102	Rural Multi-Lane Segment Four-lane Divided	907+21.000	907+80.000	59.00	0.0112	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	11.50	11.50	8.00	8.00	11.95	Non-Traversable Median	11.95	false	false		
103	Rural Multi-Lane Segment Four-lane Divided	907+80.000	907+90.000	10.00	0.0019	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	11.50	11.50	8.00	8.00	8.50	Non-Traversable Median	19.50	false	false		
104	Rural Multi-Lane Segment Four-lane Divided	907+90.000	913+70.000	580.00	0.1098	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	11.50	11.50	8.00	8.00	8.00	Non-Traversable Median	19.00	false	false		

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
105	Rural Multi-Lane Segment Four-lane Divided	913+70.000	914+00.000	30.00	0.0057	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	11.50	11.50	8.00	8.00	8.00	Traversable Median	19.00	false	false		
106	Rural Multi-Lane Segment Four-lane Divided	914+00.000	914+30.000	30.00	0.0057	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	11.50	11.50	8.00	8.00	8.00	Traversable Median	19.00	false	false		
107	Rural Multi-Lane Segment Four-lane Undivided	914+30.000	914+40.000	10.00	0.0019	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	11.50	11.50	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
108	Rural Multi-Lane Segment Four-lane Undivided	914+40.000	915+40.000	100.00	0.0189	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	11.50	11.50	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
109	Rural Multi-Lane Segment Four-lane Divided	915+40.000	916+00.000	60.00	0.0114	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	11.50	11.50	8.00	8.00	8.00	Traversable Median	19.00	false	false		
110	Rural Multi-Lane Segment Four-lane Divided	916+00.000	921+00.000	500.00	0.0947	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	11.50	11.50	8.00	8.00	8.00	Non-Traversable Median	19.00	false	false		
111	Rural Multi-Lane Segment Four-lane Divided	921+00.000	921+90.000	90.00	0.0170	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	11.50	11.50	8.00	8.00	8.00	Non-Traversable Median	19.00	false	false		
112	Rural Multi-Lane Segment Four-lane Divided	921+90.000	922+00.000	10.00	0.0019	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	11.50	11.50	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
113	Rural Multi-Lane Segment Four-lane Divided	922+00.000	922+59.000	59.00	0.0112	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	11.50	11.50	8.00	8.00	11.54	Non-Traversable Median	11.54	false	false		
114	Rural Multi-Lane Segment Four-lane Divided	922+59.000	923+00.000	41.00	0.0078	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	11.50	11.50	8.00	8.00	17.54	Non-Traversable Median	17.54	false	false		
115	Rural Multi-Lane Segment Four-lane Divided	923+00.000	941+70.000	1,870.00	0.3542	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	11.50	11.50	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
116	Rural Multi-Lane Segment Four-lane Divided	941+70.000	948+50.000	680.00	0.1288	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	11.50	11.50	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		

Table 3. User Defined CMF Used in the Eval Segment CPM Evaluation (Section 3)

Name	Description	Start Loc. (Sta. ft)	End Loc. (Sta. ft)	Start CMF Year	End CMF Year	Severity	CMF Value
1	TWLTL	585+00.000	600+00.000	2025	2050	Total	0.6900
1	TWLTL	612+50.000	639+00.000	2025	2050	Total	0.6900
1	TWLTL	640+00.000	680+90.000	2025	2050	Total	0.6900
1	TWLTL	682+20.000	699+20.000	2025	2050	Total	0.6900

Table 4. Crash History Highway - Homogeneous Segments (Section 3)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
1	Rural Multi-Lane Segment Four-lane Undivided	585+00.000	594+84.940	984.94	0.1865	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
2	Rural Multi-Lane Segment Four-lane Undivided	594+84.940	600+00.000	515.06	0.0975	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
3	Rural Multi-Lane Segment Four-lane Undivided	600+00.000	601+00.000	100.00	0.0189	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
4	Rural Multi-Lane Segment Four-lane Undivided	601+00.000	602+00.000	100.00	0.0189	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
5	Rural Multi-Lane Segment Four-lane Undivided	602+00.000	605+00.000	300.00	0.0568	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
6	Rural Multi-Lane Segment Four-lane Undivided	605+00.000	605+60.000	60.00	0.0114	2018-2022: 4,325	12.00	12.00	8.00	0.00	0.00	None	0.00	false	false	0:1	0:1
7	Rural Multi-Lane Segment Four-lane Undivided	605+60.000	605+70.000	10.00	0.0019	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
8	Rural Multi-Lane Segment Four-lane Undivided	605+70.000	605+75.000	5.00	0.0009	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
9	Rural Multi-Lane Segment Four-lane Undivided	605+75.000	609+00.000	325.00	0.0616	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
10	Rural Multi-Lane Segment Four-lane Undivided	609+00.000	609+21.930	21.93	0.0042	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
11	Rural Multi-Lane Segment Four-lane Undivided	609+21.930	611+40.000	218.07	0.0413	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
12	Rural Multi-Lane Segment Four-lane Undivided	611+40.000	612+50.000	110.00	0.0208	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
13	Rural Multi-Lane Segment Four-lane Undivided	612+50.000	624+64.530	1,214.53	0.2300	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
14	Rural Multi-Lane Segment Four-lane Undivided	624+64.530	636+92.820	1,228.29	0.2326	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
15	Rural Multi-Lane Segment Four-lane Undivided	636+92.820	639+00.000	207.18	0.0392	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
16	Rural Multi-Lane Segment Four-lane Undivided	639+00.000	640+00.000	100.00	0.0189	2018-2022: 4,325	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
17	Rural Multi-Lane Segment Four-lane Undivided	640+00.000	647+26.050	726.05	0.1375	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
18	Rural Multi-Lane Segment Four-lane Undivided	647+26.050	667+80.000	2,053.95	0.3890	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
19	Rural Multi-Lane Segment Four-lane Undivided	667+80.000	668+80.000	100.00	0.0189	2018-2022: 4,325	12.00	12.00	8.00	0.00	0.00	None	0.00	false	false	0:1	0:1
20	Rural Multi-Lane Segment Four-lane Undivided	668+80.000	672+86.110	406.11	0.0769	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
21	Rural Multi-Lane Segment Four-lane Undivided	672+86.110	676+00.000	313.89	0.0594	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
22	Rural Multi-Lane Segment Four-lane Undivided	676+00.000	677+50.000	150.00	0.0284	2018-2022: 4,325	12.00	12.00	0.00	8.00	0.00	None	0.00	false	false	0:1	0:1
23	Rural Multi-Lane Segment Four-lane Undivided	677+50.000	679+00.000	150.00	0.0284	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
24	Rural Multi-Lane Segment Four-lane Undivided	679+00.000	680+80.000	180.00	0.0341	2018-2022: 4,150	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
25	Rural Multi-Lane Segment Four-lane Undivided	680+80.000	680+90.000	10.00	0.0019	2018-2022: 4,150	12.00	12.00	0.00	8.00	0.00	None	0.00	false	false	0:1	0:1
26	Rural Multi-Lane Segment Four-lane Undivided	680+90.000	682+20.000	130.00	0.0246	2018-2022: 4,150	12.00	12.00	0.00	8.00	0.00	None	0.00	false	false	0:1	0:1
27	Rural Multi-Lane Segment Four-lane Undivided	682+20.000	683+82.710	162.71	0.0308	2018-2022: 4,150	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
28	Rural Multi-Lane Segment Four-lane Undivided	683+82.710	691+50.000	767.29	0.1453	2018-2022: 4,150	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
29	Rural Multi-Lane Segment Four-lane Undivided	691+50.000	692+70.000	120.00	0.0227	2018-2022: 4,150	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
30	Rural Multi-Lane Segment Four-lane Undivided	692+70.000	693+85.010	115.01	0.0218	2018-2022: 4,150	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
31	Rural Multi-Lane Segment Four-lane Undivided	693+85.010	698+70.000	484.99	0.0919	2018-2022: 4,150	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
32	Rural Multi-Lane Segment Four-lane Undivided	698+70.000	699+00.000	30.00	0.0057	2018-2022: 4,150	12.00	12.00	0.00	8.00	0.00	None	0.00	false	false	0:1	0:1
33	Rural Multi-Lane Segment Four-lane Undivided	699+00.000	699+20.000	20.00	0.0038	2018-2022: 4,150	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
34	Rural Multi-Lane Segment Four-lane Undivided	699+20.000	700+40.000	120.00	0.0227	2018-2022: 4,150	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
35	Rural Multi-Lane Segment Four-lane Divided	700+40.000	700+50.000	10.00	0.0019	2018-2022: 4,150	12.00	12.00	0.00	0.00	8.00	Traversable Median	8.00	false	false		
36	Rural Multi-Lane Segment Four-lane Divided	700+50.000	701+10.000	60.00	0.0114	2018-2022: 4,150	12.00	12.00	8.00	0.00	8.00	Traversable Median	8.00	false	false		
37	Rural Multi-Lane Segment Four-lane Divided	701+10.000	702+00.000	90.00	0.0170	2018-2022: 4,150	12.00	12.00	8.00	0.00	8.00	Non-Traversable Median	8.00	false	false		
38	Rural Multi-Lane Segment Four-lane Divided	702+00.000	702+50.000	50.00	0.0095	2018-2022: 4,900	12.00	12.00	8.00	0.00	8.00	Non-Traversable Median	8.00	false	false		
39	Rural Multi-Lane Segment Four-lane Divided	702+50.000	707+00.000	450.00	0.0852	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
40	Rural Multi-Lane Segment Four-lane Divided	707+00.000	708+00.000	100.00	0.0189	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
41	Rural Multi-Lane Segment Four-lane Divided	708+00.000	708+80.000	80.00	0.0152	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
42	Rural Multi-Lane Segment Four-lane Divided	708+80.000	709+00.000	20.00	0.0038	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
43	Rural Multi-Lane Segment Four-lane Undivided	709+00.000	710+30.000	130.00	0.0246	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
44	Rural Multi-Lane Segment Four-lane Divided	710+30.000	710+47.850	17.85	0.0034	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
45	Rural Multi-Lane Segment Four-lane Divided	710+47.850	725+00.000	1,452.15	0.2750	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
46	Rural Multi-Lane Segment Four-lane Divided	725+00.000	727+52.350	252.35	0.0478	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
47	Rural Multi-Lane Segment Four-lane Divided	727+52.350	735+00.000	747.65	0.1416	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
48	Rural Multi-Lane Segment Four-lane Divided	735+00.000	755+50.000	2,050.00	0.3883	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
49	Rural Multi-Lane Segment Four-lane Undivided	755+50.000	756+90.000	140.00	0.0265	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
50	Rural Multi-Lane Segment Four-lane Divided	756+90.000	757+00.000	10.00	0.0019	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
51	Rural Multi-Lane Segment Four-lane Divided	757+00.000	763+30.000	630.00	0.1193	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
52	Rural Multi-Lane Segment Four-lane Divided	763+30.000	764+00.000	70.00	0.0133	2018-2022: 4,900	12.00	12.00	8.00	8.00	11.50	Non-Traversable Median	11.50	false	false		
53	Rural Multi-Lane Segment Four-lane Divided	764+00.000	764+50.000	50.00	0.0095	2018-2022: 4,900	12.00	12.00	8.00	8.00	17.50	Non-Traversable Median	17.50	false	false		
54	Rural Multi-Lane Segment Four-lane Divided	764+50.000	765+52.550	102.55	0.0194	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
55	Rural Multi-Lane Segment Four-lane Divided	765+52.550	777+80.000	1,227.45	0.2325	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
56	Rural Multi-Lane Segment Four-lane Undivided	777+80.000	778+80.000	100.00	0.0189	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
57	Rural Multi-Lane Segment Four-lane Divided	778+80.000	779+00.000	20.00	0.0038	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
58	Rural Multi-Lane Segment Four-lane Divided	779+00.000	780+45.930	145.93	0.0276	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
59	Rural Multi-Lane Segment Four-lane Divided	780+45.930	785+40.000	494.07	0.0936	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
60	Rural Multi-Lane Segment Four-lane Divided	785+40.000	785+50.000	10.00	0.0019	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
61	Rural Multi-Lane Segment Four-lane Divided	785+50.000	786+09.000	59.00	0.0112	2018-2022: 4,900	12.00	12.00	8.00	8.00	11.54	Non-Traversable Median	11.54	false	false		
62	Rural Multi-Lane Segment Four-lane Divided	786+09.000	786+50.000	41.00	0.0078	2018-2022: 4,900	12.00	12.00	8.00	8.00	17.54	Non-Traversable Median	17.54	false	false		
63	Rural Multi-Lane Segment Four-lane Divided	786+50.000	801+10.000	1,460.00	0.2765	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
64	Rural Multi-Lane Segment Four-lane Divided	801+10.000	801+61.000	51.00	0.0097	2018-2022: 4,900	12.00	12.00	8.00	8.00	17.45	Non-Traversable Median	17.45	false	false		
65	Rural Multi-Lane Segment Four-lane Divided	801+61.000	802+30.000	69.00	0.0131	2018-2022: 4,900	12.00	12.00	8.00	8.00	11.45	Non-Traversable Median	11.45	false	false		
66	Rural Multi-Lane Segment Four-lane Divided	802+30.000	802+40.000	10.00	0.0019	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
67	Rural Multi-Lane Segment Four-lane Divided	802+40.000	808+30.000	590.00	0.1117	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
68	Rural Multi-Lane Segment Four-lane Divided	808+30.000	808+80.000	50.00	0.0095	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
69	Rural Multi-Lane Segment Four-lane Undivided	808+80.000	809+00.000	20.00	0.0038	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
70	Rural Multi-Lane Segment Four-lane Undivided	809+00.000	809+60.000	60.00	0.0114	2018-2022: 4,900	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
71	Rural Multi-Lane Segment Four-lane Divided	809+60.000	810+00.000	40.00	0.0076	2018-2022: 4,900	12.00	12.00	0.00	0.00	8.00	Traversable Median	20.00	false	false		
72	Rural Multi-Lane Segment Four-lane Divided	810+00.000	810+20.000	20.00	0.0038	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
73	Rural Multi-Lane Segment Four-lane Divided	810+20.000	816+00.000	580.00	0.1098	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
74	Rural Multi-Lane Segment Four-lane Divided	816+00.000	816+70.000	70.00	0.0133	2018-2022: 4,900	12.00	12.00	8.00	8.00	11.50	Non-Traversable Median	11.50	false	false		
75	Rural Multi-Lane Segment Four-lane Divided	816+70.000	817+20.000	50.00	0.0095	2018-2022: 4,900	12.00	12.00	8.00	8.00	17.50	Non-Traversable Median	17.50	false	false		
76	Rural Multi-Lane Segment Four-lane Divided	817+20.000	853+70.000	3,650.00	0.6913	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
77	Rural Multi-Lane Segment Four-lane Divided	853+70.000	854+00.000	30.00	0.0057	2018-2022: 4,900	12.00	12.00	8.00	8.00	18.36	Non-Traversable Median	18.36	false	false		
78	Rural Multi-Lane Segment Four-lane Divided	854+00.000	854+16.000	16.00	0.0030	2018-2022: 4,900	12.00	12.00	8.00	8.00	15.85	Non-Traversable Median	15.85	false	false		
79	Rural Multi-Lane Segment Four-lane Divided	854+16.000	854+80.000	64.00	0.0121	2018-2022: 4,900	12.00	12.00	8.00	8.00	11.49	Non-Traversable Median	11.49	false	false		
80	Rural Multi-Lane Segment Four-lane Divided	854+80.000	860+90.000	610.00	0.1155	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
81	Rural Multi-Lane Segment Four-lane Divided	860+90.000	861+85.000	95.00	0.0180	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
82	Rural Multi-Lane Segment Four-lane Undivided	861+85.000	862+00.000	15.00	0.0028	2018-2022: 4,900	12.00	12.00	8.00	0.00	0.00	None	0.00	false	false	0:1	0:1
83	Rural Multi-Lane Segment Four-lane Undivided	862+00.000	862+50.000	50.00	0.0095	2018-2022: 4,900	12.00	12.00	8.00	0.00	0.00	None	0.00	false	false	0:1	0:1

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
84	Rural Multi-Lane Segment Four-lane Undivided	862+50.000	862+60.000	10.00	0.0019	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
85	Rural Multi-Lane Segment Four-lane Divided	862+60.000	863+10.000	50.00	0.0095	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Traversable Median	19.00	false	false		
86	Rural Multi-Lane Segment Four-lane Divided	863+10.000	869+00.000	590.00	0.1117	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	19.00	false	false		
87	Rural Multi-Lane Segment Four-lane Divided	869+00.000	869+70.000	70.00	0.0133	2018-2022: 4,900	12.00	12.00	8.00	8.00	11.50	Non-Traversable Median	11.50	false	false		
88	Rural Multi-Lane Segment Four-lane Divided	869+70.000	870+20.000	50.00	0.0095	2018-2022: 4,900	12.00	12.00	8.00	8.00	17.50	Non-Traversable Median	17.50	false	false		
89	Rural Multi-Lane Segment Four-lane Divided	870+20.000	881+80.000	1,160.00	0.2197	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
90	Rural Multi-Lane Segment Four-lane Divided	881+80.000	882+31.000	51.00	0.0097	2018-2022: 4,900	12.00	12.00	8.00	8.00	17.45	Non-Traversable Median	17.45	false	false		
91	Rural Multi-Lane Segment Four-lane Divided	882+31.000	883+00.000	69.00	0.0131	2018-2022: 4,900	12.00	12.00	8.00	8.00	11.45	Non-Traversable Median	11.45	false	false		
92	Rural Multi-Lane Segment Four-lane Divided	883+00.000	887+90.000	490.00	0.0928	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
93	Rural Multi-Lane Segment Four-lane Divided	887+90.000	888+20.000	30.00	0.0057	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
94	Rural Multi-Lane Segment Four-lane Undivided	888+20.000	889+30.000	110.00	0.0208	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
95	Rural Multi-Lane Segment Four-lane Divided	889+30.000	889+50.000	20.00	0.0038	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
96	Rural Multi-Lane Segment Four-lane Divided	889+50.000	894+50.000	500.00	0.0947	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
97	Rural Multi-Lane Segment Four-lane Divided	894+50.000	895+15.000	65.00	0.0123	2018-2022: 4,900	12.00	12.00	8.00	8.00	11.55	Non-Traversable Median	11.55	false	false		
98	Rural Multi-Lane Segment Four-lane Divided	895+15.000	895+60.000	45.00	0.0085	2018-2022: 4,900	12.00	12.00	8.00	8.00	17.55	Non-Traversable Median	17.55	false	false		
99	Rural Multi-Lane Segment Four-lane Divided	895+60.000	898+00.000	240.00	0.0455	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
100	Rural Multi-Lane Segment Four-lane Divided	898+00.000	906+70.000	870.00	0.1648	2018-2022: 4,900	11.50	11.50	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
101	Rural Multi-Lane Segment Four-lane Divided	906+70.000	907+21.000	51.00	0.0097	2018-2022: 4,900	11.50	11.50	8.00	8.00	17.45	Non-Traversable Median	17.45	false	false		
102	Rural Multi-Lane Segment Four-lane Divided	907+21.000	907+80.000	59.00	0.0112	2018-2022: 4,900	11.50	11.50	8.00	8.00	11.95	Non-Traversable Median	11.95	false	false		
103	Rural Multi-Lane Segment Four-lane Divided	907+80.000	907+90.000	10.00	0.0019	2018-2022: 4,900	11.50	11.50	8.00	8.00	8.50	Non-Traversable Median	19.50	false	false		
104	Rural Multi-Lane Segment Four-lane Divided	907+90.000	913+70.000	580.00	0.1098	2018-2022: 4,900	11.50	11.50	8.00	8.00	8.00	Non-Traversable Median	19.00	false	false		
105	Rural Multi-Lane Segment Four-lane Divided	913+70.000	914+00.000	30.00	0.0057	2018-2022: 4,900	11.50	11.50	8.00	8.00	8.00	Traversable Median	19.00	false	false		
106	Rural Multi-Lane Segment Four-lane Divided	914+00.000	914+30.000	30.00	0.0057	2018-2022: 4,900	11.50	11.50	8.00	8.00	8.00	Traversable Median	19.00	false	false		
107	Rural Multi-Lane Segment Four-lane Undivided	914+30.000	914+40.000	10.00	0.0019	2018-2022: 4,900	11.50	11.50	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
108	Rural Multi-Lane Segment Four-lane Undivided	914+40.000	915+40.000	100.00	0.0189	2018-2022: 4,900	11.50	11.50	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
109	Rural Multi-Lane Segment Four-lane Divided	915+40.000	916+00.000	60.00	0.0114	2018-2022: 4,900	11.50	11.50	8.00	8.00	8.00	Traversable Median	19.00	false	false		
110	Rural Multi-Lane Segment Four-lane Divided	916+00.000	921+00.000	500.00	0.0947	2018-2022: 4,900	11.50	11.50	8.00	8.00	8.00	Non-Traversable Median	19.00	false	false		
111	Rural Multi-Lane Segment Four-lane Divided	921+00.000	921+90.000	90.00	0.0170	2018-2022: 4,900	11.50	11.50	8.00	8.00	8.00	Non-Traversable Median	19.00	false	false		
112	Rural Multi-Lane Segment Four-lane Divided	921+90.000	922+00.000	10.00	0.0019	2018-2022: 4,900	11.50	11.50	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
113	Rural Multi-Lane Segment Four-lane Divided	922+00.000	922+59.000	59.00	0.0112	2018-2022: 4,900	11.50	11.50	8.00	8.00	11.54	Non-Traversable Median	11.54	false	false		
114	Rural Multi-Lane Segment Four-lane Divided	922+59.000	923+00.000	41.00	0.0078	2018-2022: 4,900	11.50	11.50	8.00	8.00	17.54	Non-Traversable Median	17.54	false	false		
115	Rural Multi-Lane Segment Four-lane Divided	923+00.000	941+70.000	1,870.00	0.3542	2018-2022: 4,900	11.50	11.50	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
116	Rural Multi-Lane Segment Four-lane Divided	941+70.000	948+50.000	680.00	0.1288	2018-2022: 4,900	11.50	11.50	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		

Table 5. Evaluation Intersection (Section 3)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
1	I90EBRamp_S466th_SD38 (v1)	Rural Multi-Lane Intersection Four-Legged w/STOP control	699+20.000	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	2025: 630; 2026: 644; 2027: 657; 2028: 671; 2029: 685; 2030: 700; 2031: 716; 2032: 732; 2033: 748; 2034: 764; 2035: 780; 2036: 796; 2037: 812; 2038: 828; 2039: 844; 2040: 860; 2041: 1,166; 2042: 1,473; 2043: 1,779; 2044: 2,086; 2045: 2,392; 2046: 2,699; 2047: 3,005; 2048: 3,312; 2049: 3,618; 2050: 3,925	4	Stop-Controlled	1	0	4.64	4.27	false
2	SD38/260th_St (v1)	Rural Multi-Lane Intersection Four-Legged w/STOP control	605+70.000	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	2025: 1,508; 2026: 1,706; 2027: 1,904; 2028: 2,102; 2029: 2,300; 2030: 2,472; 2031: 2,645; 2032: 2,818; 2033: 2,990; 2034: 3,163; 2035: 3,336; 2036: 3,509; 2037: 3,681; 2038: 3,854; 2039: 4,027; 2040: 4,200; 2041: 4,260; 2042: 4,320; 2043: 4,380; 2044: 4,440; 2045: 4,500; 2046: 4,560; 2047: 4,620; 2048: 4,680; 2049: 4,740; 2050: 4,800	4	Stop-Controlled	2	1	16.83	13.71	false
3	466thN/SD38 (v1)	Rural Multi-Lane Intersection Three-Legged w/STOP control	676+50.000	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	2025: 118; 2026: 121; 2027: 124; 2028: 127; 2029: 130; 2030: 133; 2031: 136; 2032: 139; 2033: 142; 2034: 145; 2035: 149; 2036: 152; 2037: 155; 2038: 158; 2039: 161; 2040: 165; 2041: 168; 2042: 172; 2043: 175; 2044: 179; 2045: 182; 2046: 186; 2047: 189; 2048: 193; 2049: 196; 2050: 200	3	Stop-Controlled	0	0	6.61		false

Table 6. Evaluation Intersection (Section 3)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
5	468th Ave (v1)	Rural Multi-Lane Intersection Four-Legged w/STOP control	809+00.000	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	2025: 667; 2026: 682; 2027: 696; 2028: 710; 2029: 725; 2030: 741; 2031: 758; 2032: 775; 2033: 792; 2034: 809; 2035: 825; 2036: 842; 2037: 859; 2038: 876; 2039: 893; 2040: 910; 2041: 1,052; 2042: 1,195; 2043: 1,337; 2044: 1,480; 2045: 1,622; 2046: 1,765; 2047: 1,907; 2048: 2,050; 2049: 2,192; 2050: 2,335	4	Stop-Controlled	1	0	0.00	0.00	false
6	SD38/Hwy 139 (v1)	Rural Multi-Lane Intersection Four-Legged w/STOP control	862+00.000	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	2025: 2,990; 2026: 3,054; 2027: 3,117; 2028: 3,181; 2029: 3,245; 2030: 3,321; 2031: 3,397; 2032: 3,474; 2033: 3,550; 2034: 3,626; 2035: 3,703; 2036: 3,779; 2037: 3,855; 2038: 3,932; 2039: 4,008; 2040: 4,085; 2041: 4,178; 2042: 4,271; 2043: 4,364; 2044: 4,457; 2045: 4,550; 2046: 4,643; 2047: 4,736; 2048: 4,829; 2049: 4,922; 2050: 5,015	4	Stop-Controlled	1	0	0.00	0.00	false
7	LaMesa/SD 38 (v1)	Rural Multi-Lane Intersection Four-Legged w/STOP control	915+00.000	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	2025: 1,266; 2026: 1,293; 2027: 1,320; 2028: 1,347; 2029: 1,375; 2030: 1,407; 2031: 1,439; 2032: 1,471; 2033: 1,504; 2034: 1,536; 2035: 1,568; 2036: 1,725; 2037: 1,949; 2038: 2,172; 2039: 2,396; 2040: 2,620; 2041: 2,940; 2042: 3,261; 2043: 3,581; 2044: 3,902; 2045: 4,222; 2046: 4,543; 2047: 4,863; 2048: 5,184; 2049: 5,504; 2050: 5,825	4	Stop-Controlled	0	0	0.00	0.00	false

Table 7. Evaluation Ramp Terminal - Site (Section 3)

Inter. No.	Title	Type	Area Type	Legs	Location (Sta. ft)	Traffic Control	AADT
4	I90WB Ramps (v2)	Freeway Ramp Terminal A2 - Three-Leg at Two-Quadrant Parclo A	Rural	4	681+00.000	Stop-Controlled	Inside: 2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170; Outside: 2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170 :: Entrance: 2025: 856; 2026: 875; 2027: 893; 2028: 911; 2029: 930; 2030: 951; 2031: 973; 2032: 995; 2033: 1,017; 2034: 1,039; 2035: 1,060; 2036: 1,082; 2037: 1,104; 2038: 1,126; 2039: 1,148; 2040: 1,170; 2041: 1,339; 2042: 1,508; 2043: 1,677; 2044: 1,846; 2045: 2,015; 2046: 2,184; 2047: 2,353; 2048: 2,522; 2049: 2,691; 2050: 2,860

Table 8. Crash History Intersection (Section 3)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
1	I90EBRamp_S466th_SD38 (v1)	Rural Multi-Lane Intersection Four-Legged w/STOP control	699+20.000	2018-2022: 4,150	2018-2022: 590	4	Stop-Controlled	1	0	4.64	4.27	false
2	SD38/260th_St (v1)	Rural Multi-Lane Intersection Four-Legged w/STOP control	605+70.000	2018-2022: 4,325	2018-2022: 915	4	Stop-Controlled	2	1	16.83	13.71	false
3	466thN/SD38 (v1)	Rural Multi-Lane Intersection Three-Legged w/STOP control	676+50.000	2018-2022: 4,325	2018-2022: 110	3	Stop-Controlled	0	0	6.61		false

Table 9. Crash History Intersection (Section 3)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
5	468th Ave (v1)	Rural Multi-Lane Intersection Four-Legged w/STOP control	809+00.000	2018-2022: 4,900	2018-2022: 625	4	Stop-Controlled	1	0	0.00	0.00	false
6	SD38/Hwy139 (v1)	Rural Multi-Lane Intersection Four-Legged w/STOP control	862+00.000	2018-2022: 4,900	2018-2022: 2,800	4	Stop-Controlled	1	0	0.00	0.00	false
7	LaMesa/SD38 (v1)	Rural Multi-Lane Intersection Four-Legged w/STOP control	915+00.000	2018-2022: 4,900	2018-2022: 1,185	4	Stop-Controlled	0	0	0.00	0.00	false

Table 10. Crash Highway Ramp Terminal - Site (Highway with Crash History)

Inter. No.	Title	Type	Area Type	Legs	Location (Sta. ft)	Traffic Control	AADT
4	I90WB Ramps (v2)	Freeway Ramp Terminal A2 - Three-Leg at Two-Quadrant Parclo A	Rural	4	681+00.000	Stop-Controlled	Inside: 2018-2022: 4,150; Outside: 2018-2022: 4,150 :: Entrance: 2018-2022: 802

Table 11. Expected Highway Crash Rates and Frequencies Summary (Section 3)

First Year of Analysis	**2025**
Last Year of Analysis	**2050**
Evaluated Length (mi)	**6.8845**
Average Future Road AADT (vpd)	**10,372**
Expected Crashes	
Total Crashes	**621.51**
Fatal and Injury Crashes	**327.86**
Fatal and Serious Injury Crashes	**204.46**
Property-Damage-Only Crashes	**293.65**
Percent of Total Expected Crashes	
Percent Fatal and Injury Crashes (%)	**53**
Percent Fatal and Serious Injury Crashes (%)	**33**
Percent Property-Damage-Only Crashes (%)	**47**
Expected Crash Rate	
Crash Rate (crashes/mi/yr)	**3.4722**
FI Crash Rate (crashes/mi/yr)	**1.8316**
FI no/C Crash Rate (crashes/mi/yr)	**1.1422**
PDO Crash Rate (crashes/mi/yr)	**1.6405**
Expected Travel Crash Rate	
Total Travel (million veh-mi)	**677.62**
Travel Crash Rate (crashes/million veh-mi)	**0.92**
Travel FI Crash Rate (crashes/million veh-mi)	**0.48**
Travel FI no/C Crash Rate (crashes/million veh-mi)	**0.30**
Travel PDO Crash Rate (crashes/million veh-mi)	**0.43**

Table 12. Expected Crash Frequencies and Rates by Highway Segment/Intersection (Section 3)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected FI no/C Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted FI no/C Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) FI no/C Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
1	585+00.000	594+84.940	0.1865	12.419	12.987	0.4777	0.3553	0.2214	0.1223	0.4995	0.2945	0.1563	0.2050	-0.0218	0.0608	0.0652	-0.0826	2.5607	0.59	
2	594+84.940	600+00.000	0.0975	3.241	6.791	0.1246	0.0755	0.0471	0.0491	0.2612	0.1540	0.0817	0.1072	-0.1366	-0.0785	-0.0347	-0.0581	1.2777	0.29	
3	600+00.000	601+00.000	0.0189	0.912	1.911	0.0351	0.0212	0.0132	0.0138	0.0735	0.0433	0.0230	0.0302	-0.0384	-0.0221	-0.0098	-0.0163	1.8518	0.42	
4	601+00.000	602+00.000	0.0189	0.912	1.911	0.0351	0.0212	0.0132	0.0138	0.0735	0.0433	0.0230	0.0302	-0.0384	-0.0221	-0.0098	-0.0163	1.8518	0.42	
5	602+00.000	605+00.000	0.0568	15.348	7.486	0.5903	0.1555	0.0969	0.4348	0.2879	0.1665	0.0852	0.1214	0.3024	-0.0110	0.0117	0.3134	10.3895	1.90	
6	605+00.000	605+60.000	0.0114	0.743	1.629	0.0286	0.0173	0.0108	0.0113	0.0627	0.0362	0.0185	0.0264	-0.0341	-0.0190	-0.0078	-0.0151	2.5153	0.46	
7	605+60.000	605+70.000	0.0019	0.119	0.249	0.0046	0.0028	0.0017	0.0018	0.0096	0.0056	0.0028	0.0040	-0.0050	-0.0028	-0.0011	-0.0022	2.4181	0.44	
SD38/260th_St (v1)	605+70.000			35.375	96.924	1.3606	0.5456	0.3469	0.8150	3.7279	1.7583	0.8841	1.9696	-2.3673	-1.2127	-0.5372	-1.1546			0.20
8	605+70.000	605+75.000	0.0009	0.059	0.125	0.0023	0.0014	0.0009	0.0009	0.0048	0.0028	0.0014	0.0020	-0.0025	-0.0014	-0.0006	-0.0011	2.4181	0.44	
9	605+75.000	609+00.000	0.0616	15.646	8.110	0.6018	0.5117	0.3188	0.0901	0.3119	0.1804	0.0923	0.1315	0.2898	0.3313	0.2266	-0.0415	9.7763	1.79	
10	609+00.000	609+21.930	0.0042	12.037	0.547	0.4630	0.0149	0.0093	0.4480	0.0210	0.0122	0.0062	0.0089	0.4419	0.0028	0.0031	0.4392	111.4663	20.38	
11	609+21.930	611+40.000	0.0413	2.597	5.442	0.0999	0.0605	0.0377	0.0394	0.2093	0.1210	0.0619	0.0883	-0.1094	-0.0605	-0.0242	-0.0489	2.4181	0.44	
12	611+40.000	612+50.000	0.0208	1.310	2.745	0.0504	0.0305	0.0190	0.0199	0.1056	0.0611	0.0312	0.0445	-0.0552	-0.0305	-0.0122	-0.0247	2.4181	0.44	
13	612+50.000	624+64.530	0.2300	18.104	20.912	0.6963	0.3194	0.1990	0.3770	0.8043	0.4651	0.2379	0.3391	-0.1080	-0.1458	-0.0389	0.0378	3.0271	0.55	
14	624+64.530	636+92.820	0.2326	10.091	21.149	0.3881	0.2351	0.1465	0.1530	0.8134	0.4704	0.2406	0.3430	-0.4253	-0.2353	-0.0941	-0.1900	1.6685	0.30	
15	636+92.820	639+00.000	0.0392	1.702	3.567	0.0655	0.0397	0.0247	0.0258	0.1372	0.0793	0.0406	0.0579	-0.0717	-0.0397	-0.0159	-0.0320	1.6685	0.30	
16	639+00.000	640+00.000	0.0189	1.282	2.935	0.0493	0.0297	0.0185	0.0196	0.1129	0.0653	0.0334	0.0476	-0.0636	-0.0356	-0.0149	-0.0280	2.6043	0.48	
17	640+00.000	647+26.050	0.1375	14.091	12.501	0.5419	0.2136	0.1331	0.3283	0.4808	0.2781	0.1422	0.2027	0.0611	-0.0644	-0.0091	0.1256	3.9411	0.72	
18	647+26.050	667+80.000	0.3890	33.126	35.365	1.2741	0.5595	0.3486	0.7146	1.3602	0.7866	0.4024	0.5735	-0.0861	-0.2271	-0.0538	0.1410	3.2752	0.60	
19	667+80.000	668+80.000	0.0189	0.855	1.874	0.0329	0.0198	0.0124	0.0130	0.0721	0.0417	0.0213	0.0304	-0.0392	-0.0218	-0.0090	-0.0174	1.7355	0.32	
20	668+80.000	672+86.110	0.0769	3.337	6.992	0.1283	0.0777	0.0484	0.0506	0.2689	0.1555	0.0796	0.1134	-0.1406	-0.0778	-0.0311	-0.0628	1.6685	0.30	
21	672+86.110	676+00.000	0.0594	18.830	5.404	0.7242	0.6591	0.4107	0.0651	0.2079	0.1202	0.0615	0.0877	0.5164	0.5389	0.3492	-0.0225	12.1822	2.23	
22	676+00.000	677+50.000	0.0284	18.186	2.810	0.6995	0.6651	0.4144	0.0344	0.1081	0.0625	0.0320	0.0456	0.5914	0.6025	0.3824	-0.0112	24.6213	4.50	
466thN/SD38 (v1)	676+50.000			22.161	36.857	0.8523	0.4087	0.2971	0.4437	1.4176	0.6242	0.3958	0.7934	-0.5652	-0.2155	-0.0987	-0.3497			0.15
23	677+50.000	679+00.000	0.0284	25.609	2.583	0.9849	0.4193	0.2613	0.5656	0.0993	0.0574	0.0294	0.0419	0.8856	0.3619	0.2319	0.5238	34.6702	6.34	
24	679+00.000	680+80.000	0.0341	0.911	1.863	0.0351	0.0213	0.0134	0.0137	0.0716	0.0429	0.0235	0.0287	-0.0366	-0.0216	-0.0101	-0.0150	1.0282	0.29	
25	680+80.000	680+90.000	0.0019	0.053	0.113	0.0020	0.0012	0.0008	0.0008	0.0043	0.0026	0.0014	0.0017	-0.0023	-0.0014	-0.0006	-0.0009	1.0706	0.30	
26	680+90.000	682+20.000	0.0246	0.993	2.121	0.0382	0.0232	0.0145	0.0150	0.0816	0.0489	0.0267	0.0327	-0.0434	-0.0257	-0.0122	-0.0177	1.5517	0.44	
I90WB Ramps (v2)	681+00.000			20.225	15.236	0.7779	0.4251		0.3528	0.5860	0.1969		0.3891	0.1919	0.2282		-0.0363			0.20
27	682+20.000	683+82.710	0.0308	0.824	1.684	0.0317	0.0193	0.0121	0.0124	0.0648	0.0388	0.0212	0.0260	-0.0331	-0.0195	-0.0091	-0.0136	1.0282	0.29	
28	683+82.710	691+50.000	0.1453	3.885	7.940	0.1494	0.0909	0.0570	0.0585	0.3054	0.1830	0.1001	0.1224	-0.1560	-0.0920	-0.0431	-0.0639	1.0282	0.29	
29	691+50.000	692+70.000	0.0227	0.608	1.242	0.0234	0.0142	0.0089	0.0091	0.0478	0.0286	0.0157	0.0191	-0.0244	-0.0144	-0.0067	-0.0100	1.0282	0.29	
30	692+70.000	693+85.010	0.0218	0.582	1.190	0.0224	0.0136	0.0085	0.0088	0.0458	0.0274	0.0150	0.0183	-0.0234	-0.0138	-0.0065	-0.0096	1.0282	0.29	
31	693+85.010	698+70.000	0.0919	2.456	5.019	0.0944	0.0575	0.0360	0.0370	0.1930	0.1156	0.0633	0.0774	-0.0986	-0.0582	-0.0272	-0.0404	1.0282	0.29	
32	698+70.000	699+00.000	0.0057	0.158	0.338	0.0061	0.0037	0.0023	0.0024	0.0130	0.0078	0.0043	0.0052	-0.0069	-0.0041	-0.0019	-0.0028	1.0706	0.30	
33	699+00.000	699+20.000	0.0038	0.109	0.243	0.0042	0.0025	0.0016	0.0017	0.0094	0.0056	0.0031	0.0038	-0.0052	-0.0031	-0.0015	-0.0021	1.1096	0.31	
I90EBRamp_S466th_SD38 (v1)	699+20.000			20.777	59.524	0.7991	0.3462	0.2319	0.4529	2.2894	1.2112	0.6869	1.0782	-1.4903	-0.8649	-0.4550	-0.6253			0.20
34	699+20.000	700+40.000	0.0227	0.950	2.117	0.0365	0.0221	0.0139	0.0145	0.0814	0.0488	0.0267	0.0326	-0.0449	-0.0267	-0.0128	-0.0182	1.6081	0.45	
35	700+40.000	700+50.000	0.0019	0.056	0.111	0.0022	0.0012	0.0008	0.0010	0.0043	0.0022	0.0014	0.0020	-0.0021	-0.0010	-0.0006	-0.0011	1.1385	0.32	

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected FI no/C Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted FI no/C Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) FI no/C Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
36	700+50.000	701+10.000	0.0114	0.323	0.615	0.0124	0.0069	0.0048	0.0055	0.0237	0.0124	0.0079	0.0113	-0.0112	-0.0054	-0.0032	-0.0058	1.0929	0.31	
37	701+10.000	702+00.000	0.0170	0.474	0.887	0.0182	0.0102	0.0070	0.0081	0.0341	0.0178	0.0115	0.0163	-0.0159	-0.0077	-0.0044	-0.0082	1.0704	0.30	
38	702+00.000	702+50.000	0.0095	0.199	0.404	0.0076	0.0042	0.0029	0.0034	0.0155	0.0083	0.0054	0.0073	-0.0079	-0.0041	-0.0025	-0.0038	0.8065	0.27	
39	702+50.000	707+00.000	0.0852	1.712	3.338	0.0658	0.0362	0.0247	0.0296	0.1284	0.0683	0.0447	0.0601	-0.0625	-0.0321	-0.0200	-0.0305	0.7724	0.26	
40	707+00.000	708+00.000	0.0189	0.380	0.742	0.0146	0.0080	0.0055	0.0066	0.0285	0.0152	0.0099	0.0134	-0.0139	-0.0071	-0.0044	-0.0068	0.7724	0.26	
41	708+00.000	708+80.000	0.0152	0.304	0.593	0.0117	0.0064	0.0044	0.0053	0.0228	0.0121	0.0079	0.0107	-0.0111	-0.0057	-0.0035	-0.0054	0.7724	0.26	
42	708+80.000	709+00.000	0.0038	0.077	0.151	0.0030	0.0016	0.0011	0.0013	0.0058	0.0031	0.0020	0.0027	-0.0029	-0.0015	-0.0009	-0.0014	0.7802	0.27	
43	709+00.000	710+30.000	0.0246	0.687	1.558	0.0264	0.0158	0.0096	0.0106	0.0599	0.0365	0.0206	0.0234	-0.0335	-0.0207	-0.0110	-0.0128	1.0727	0.36	
44	710+30.000	710+47.850	0.0034	0.068	0.132	0.0026	0.0014	0.0010	0.0012	0.0051	0.0027	0.0018	0.0024	-0.0025	-0.0013	-0.0008	-0.0012	0.7724	0.26	
45	710+47.850	725+00.000	0.2750	18.323	10.771	0.7047	0.3140	0.2144	0.3907	0.4143	0.2203	0.1442	0.1939	0.2905	0.0937	0.0702	0.1968	2.5624	0.87	
46	725+00.000	727+52.350	0.0478	0.960	1.872	0.0369	0.0203	0.0139	0.0166	0.0720	0.0383	0.0251	0.0337	-0.0351	-0.0180	-0.0112	-0.0171	0.7724	0.26	
47	727+52.350	735+00.000	0.1416	2.844	5.545	0.1094	0.0602	0.0411	0.0492	0.2133	0.1134	0.0742	0.0998	-0.1039	-0.0533	-0.0332	-0.0506	0.7724	0.26	
48	735+00.000	755+50.000	0.3883	7.797	15.205	0.2999	0.1650	0.1126	0.1349	0.5848	0.3111	0.2035	0.2737	-0.2849	-0.1461	-0.0909	-0.1388	0.7724	0.26	
49	755+50.000	756+90.000	0.0265	0.740	1.678	0.0284	0.0170	0.0104	0.0114	0.0645	0.0393	0.0222	0.0252	-0.0361	-0.0223	-0.0118	-0.0138	1.0727	0.36	
50	756+90.000	757+00.000	0.0019	0.038	0.076	0.0015	0.0008	0.0006	0.0007	0.0029	0.0015	0.0010	0.0014	-0.0014	-0.0007	-0.0005	-0.0007	0.7802	0.27	
51	757+00.000	763+30.000	0.1193	2.396	4.673	0.0922	0.0507	0.0346	0.0415	0.1797	0.0956	0.0626	0.0841	-0.0876	-0.0449	-0.0279	-0.0427	0.7724	0.26	
52	763+30.000	764+00.000	0.0133	0.266	0.519	0.0102	0.0056	0.0038	0.0046	0.0200	0.0106	0.0070	0.0093	-0.0097	-0.0050	-0.0031	-0.0047	0.7724	0.26	
53	764+00.000	764+50.000	0.0095	0.190	0.371	0.0073	0.0040	0.0027	0.0033	0.0143	0.0076	0.0050	0.0067	-0.0069	-0.0036	-0.0022	-0.0034	0.7724	0.26	
54	764+50.000	765+52.550	0.0194	0.390	0.761	0.0150	0.0083	0.0056	0.0067	0.0293	0.0156	0.0102	0.0137	-0.0143	-0.0073	-0.0045	-0.0069	0.7724	0.26	
55	765+52.550	777+80.000	0.2325	8.935	9.104	0.3437	0.1340	0.0915	0.2097	0.3502	0.1862	0.1219	0.1639	-0.0065	-0.0523	-0.0304	0.0458	1.4783	0.50	
56	777+80.000	778+80.000	0.0189	0.528	1.198	0.0203	0.0121	0.0074	0.0082	0.0461	0.0281	0.0159	0.0180	-0.0258	-0.0159	-0.0084	-0.0098	1.0727	0.36	
57	778+80.000	779+00.000	0.0038	0.077	0.151	0.0030	0.0016	0.0011	0.0013	0.0058	0.0031	0.0020	0.0027	-0.0029	-0.0015	-0.0009	-0.0014	0.7802	0.27	
58	779+00.000	780+45.930	0.0276	0.555	1.082	0.0213	0.0117	0.0080	0.0096	0.0416	0.0221	0.0145	0.0195	-0.0203	-0.0104	-0.0065	-0.0099	0.7724	0.26	
59	780+45.930	785+40.000	0.0936	1.879	3.664	0.0723	0.0398	0.0271	0.0325	0.1409	0.0750	0.0491	0.0660	-0.0687	-0.0352	-0.0219	-0.0335	0.7724	0.26	
60	785+40.000	785+50.000	0.0019	0.038	0.074	0.0015	0.0008	0.0005	0.0007	0.0029	0.0015	0.0010	0.0013	-0.0014	-0.0007	-0.0004	-0.0007	0.7724	0.26	
61	785+50.000	786+09.000	0.0112	0.224	0.438	0.0086	0.0047	0.0032	0.0039	0.0168	0.0090	0.0059	0.0079	-0.0082	-0.0042	-0.0026	-0.0040	0.7724	0.26	
62	786+09.000	786+50.000	0.0078	0.156	0.304	0.0060	0.0033	0.0023	0.0027	0.0117	0.0062	0.0041	0.0055	-0.0057	-0.0029	-0.0018	-0.0028	0.7724	0.26	
63	786+50.000	801+10.000	0.2765	14.086	10.829	0.5418	0.2903	0.1982	0.2515	0.4165	0.2215	0.1450	0.1950	0.1253	0.0688	0.0532	0.0565	1.9593	0.67	
64	801+10.000	801+61.000	0.0097	0.194	0.378	0.0075	0.0041	0.0028	0.0034	0.0145	0.0077	0.0051	0.0068	-0.0071	-0.0036	-0.0023	-0.0035	0.7724	0.26	
65	801+61.000	802+30.000	0.0131	4.529	0.512	0.1742	0.1653	0.1128	0.0089	0.0197	0.0105	0.0069	0.0092	0.1545	0.1548	0.1060	-0.0003	13.3297	4.54	
66	802+30.000	802+40.000	0.0019	0.038	0.074	0.0015	0.0008	0.0005	0.0007	0.0029	0.0015	0.0010	0.0013	-0.0014	-0.0007	-0.0004	-0.0007	0.7724	0.26	
67	802+40.000	808+30.000	0.1117	2.244	4.376	0.0863	0.0475	0.0324	0.0388	0.1683	0.0895	0.0586	0.0788	-0.0820	-0.0420	-0.0262	-0.0400	0.7724	0.26	
68	808+30.000	808+80.000	0.0095	0.192	0.378	0.0074	0.0041	0.0028	0.0033	0.0145	0.0077	0.0051	0.0068	-0.0072	-0.0037	-0.0023	-0.0035	0.7802	0.27	
69	808+80.000	809+00.000	0.0038	0.106	0.240	0.0041	0.0024	0.0015	0.0016	0.0092	0.0056	0.0032	0.0036	-0.0052	-0.0032	-0.0017	-0.0020	1.0727	0.36	
468th Ave (v1)	809+00.000			30.877	45.501	1.1876	0.7630	0.5027	0.4246	1.7500	0.8386	0.4933	0.9115	-0.5624	-0.0756	0.0094	-0.4869			0.35
70	809+00.000	809+60.000	0.0114	0.400	0.998	0.0154	0.0091	0.0056	0.0063	0.0384	0.0231	0.0128	0.0153	-0.0230	-0.0140	-0.0072	-0.0090	1.3553	0.40	
71	809+60.000	810+00.000	0.0076	0.193	0.414	0.0074	0.0041	0.0028	0.0033	0.0159	0.0084	0.0054	0.0076	-0.0085	-0.0043	-0.0026	-0.0042	0.9798	0.29	
72	810+00.000	810+20.000	0.0038	0.089	0.175	0.0034	0.0019	0.0013	0.0015	0.0067	0.0035	0.0023	0.0032	-0.0033	-0.0017	-0.0010	-0.0017	0.9039	0.27	
73	810+20.000	816+00.000	0.1098	7.498	4.984	0.2884	0.0848	0.0579	0.2036	0.1917	0.1006	0.0651	0.0910	0.0967	-0.0158	-0.0071	0.1125	2.6254	0.78	
74	816+00.000	816+70.000	0.0133	0.308	0.602	0.0119	0.0065	0.0045	0.0053	0.0231	0.0121	0.0079	0.0110	-0.0113	-0.0056	-0.0034	-0.0057	0.8948	0.27	
75	816+70.000	817+20.000	0.0095	0.220	0.430	0.0085	0.0047	0.0032	0.0038	0.0165	0.0087	0.0056	0.0078	-0.0081	-0.0040	-0.0024	-0.0040	0.8948	0.27	

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected FI no/C Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted FI no/C Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) FI no/C Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
76	817+20.000	853+70.000	0.6913	40.796	31.361	1.5691	0.9058	0.6183	0.6633	1.2062	0.6332	0.4094	0.5730	0.3629	0.2725	0.2089	0.0903	2.2698	0.67	
77	853+70.000	854+00.000	0.0057	0.132	0.258	0.0051	0.0028	0.0019	0.0023	0.0099	0.0052	0.0034	0.0047	-0.0048	-0.0024	-0.0015	-0.0024	0.8948	0.27	
78	854+00.000	854+16.000	0.0030	0.070	0.138	0.0027	0.0015	0.0010	0.0012	0.0053	0.0028	0.0018	0.0025	-0.0026	-0.0013	-0.0008	-0.0013	0.8948	0.27	
79	854+16.000	854+80.000	0.0121	0.282	0.550	0.0108	0.0060	0.0041	0.0049	0.0211	0.0111	0.0072	0.0100	-0.0103	-0.0051	-0.0031	-0.0052	0.8948	0.27	
80	854+80.000	860+90.000	0.1155	2.688	5.241	0.1034	0.0569	0.0388	0.0465	0.2016	0.1058	0.0684	0.0958	-0.0982	-0.0490	-0.0296	-0.0493	0.8948	0.27	
81	860+90.000	861+85.000	0.0180	0.423	0.833	0.0163	0.0089	0.0061	0.0073	0.0320	0.0168	0.0109	0.0152	-0.0158	-0.0079	-0.0048	-0.0079	0.9039	0.27	
82	861+85.000	862+00.000	0.0028	0.097	0.231	0.0037	0.0022	0.0014	0.0015	0.0089	0.0053	0.0030	0.0035	-0.0051	-0.0031	-0.0016	-0.0020	1.3127	0.39	
SD38/Hwy139 (v1)	862+00.000			37.280	89.593	1.4338	0.6694	0.3723	0.7644	3.4459	1.8214	0.9272	1.6245	-2.0120	-1.1520	-0.5549	-0.8600			0.28
83	862+00.000	862+50.000	0.0095	0.379	0.903	0.0146	0.0087	0.0053	0.0059	0.0347	0.0207	0.0112	0.0141	-0.0201	-0.0120	-0.0059	-0.0082	1.5407	0.40	
84	862+50.000	862+60.000	0.0019	0.073	0.166	0.0028	0.0017	0.0010	0.0011	0.0064	0.0038	0.0021	0.0026	-0.0036	-0.0021	-0.0010	-0.0015	1.4857	0.38	
85	862+60.000	863+10.000	0.0095	0.257	0.505	0.0099	0.0054	0.0037	0.0044	0.0194	0.0101	0.0064	0.0094	-0.0096	-0.0046	-0.0027	-0.0049	1.0426	0.27	
86	863+10.000	869+00.000	0.1117	8.700	5.848	0.3346	0.0992	0.0677	0.2354	0.2249	0.1166	0.0745	0.1083	0.1097	-0.0174	-0.0068	0.1271	2.9945	0.77	
87	869+00.000	869+70.000	0.0133	0.356	0.694	0.0137	0.0075	0.0051	0.0062	0.0267	0.0138	0.0088	0.0128	-0.0130	-0.0063	-0.0037	-0.0067	1.0321	0.27	
88	869+70.000	870+20.000	0.0095	0.254	0.495	0.0098	0.0054	0.0037	0.0044	0.0191	0.0099	0.0063	0.0092	-0.0093	-0.0045	-0.0026	-0.0048	1.0321	0.27	
89	870+20.000	881+80.000	0.2197	11.597	11.497	0.4460	0.3089	0.2109	0.1371	0.4422	0.2293	0.1465	0.2129	0.0039	0.0796	0.0644	-0.0758	2.0302	0.52	
90	881+80.000	882+31.000	0.0097	0.259	0.505	0.0100	0.0055	0.0037	0.0045	0.0194	0.0101	0.0064	0.0094	-0.0095	-0.0046	-0.0027	-0.0049	1.0321	0.27	
91	882+31.000	883+00.000	0.0131	0.351	0.684	0.0135	0.0074	0.0051	0.0061	0.0263	0.0136	0.0087	0.0127	-0.0128	-0.0062	-0.0037	-0.0066	1.0321	0.27	
92	883+00.000	887+90.000	0.0928	8.192	4.856	0.3151	0.2475	0.1689	0.0676	0.1868	0.0968	0.0619	0.0899	0.1283	0.1506	0.1070	-0.0223	3.3950	0.88	
93	887+90.000	888+20.000	0.0057	0.154	0.303	0.0059	0.0033	0.0022	0.0027	0.0117	0.0060	0.0039	0.0056	-0.0057	-0.0028	-0.0016	-0.0030	1.0426	0.27	
94	888+20.000	889+30.000	0.0208	0.805	1.826	0.0310	0.0185	0.0113	0.0124	0.0702	0.0418	0.0226	0.0284	-0.0393	-0.0233	-0.0113	-0.0160	1.4857	0.38	
95	889+30.000	889+50.000	0.0038	0.103	0.202	0.0039	0.0022	0.0015	0.0018	0.0078	0.0040	0.0026	0.0037	-0.0038	-0.0019	-0.0011	-0.0020	1.0426	0.27	
96	889+50.000	894+50.000	0.0947	2.541	4.955	0.0977	0.0538	0.0367	0.0440	0.1906	0.0988	0.0632	0.0918	-0.0929	-0.0451	-0.0265	-0.0478	1.0321	0.27	
97	894+50.000	895+15.000	0.0123	0.330	0.644	0.0127	0.0070	0.0048	0.0057	0.0248	0.0128	0.0082	0.0119	-0.0121	-0.0059	-0.0034	-0.0062	1.0321	0.27	
98	895+15.000	895+60.000	0.0085	0.229	0.446	0.0088	0.0048	0.0033	0.0040	0.0172	0.0089	0.0057	0.0083	-0.0084	-0.0041	-0.0024	-0.0043	1.0321	0.27	
99	895+60.000	898+00.000	0.0455	1.220	2.379	0.0469	0.0258	0.0176	0.0211	0.0915	0.0474	0.0303	0.0441	-0.0446	-0.0216	-0.0127	-0.0229	1.0321	0.27	
100	898+00.000	906+70.000	0.1648	4.439	8.687	0.1707	0.0939	0.0641	0.0768	0.3341	0.1732	0.1107	0.1609	-0.1634	-0.0793	-0.0466	-0.0841	1.0361	0.27	
101	906+70.000	907+21.000	0.0097	0.260	0.509	0.0100	0.0055	0.0038	0.0045	0.0196	0.0102	0.0065	0.0094	-0.0096	-0.0047	-0.0027	-0.0049	1.0361	0.27	
102	907+21.000	907+80.000	0.0112	0.301	0.589	0.0116	0.0064	0.0043	0.0052	0.0227	0.0117	0.0075	0.0109	-0.0111	-0.0054	-0.0032	-0.0057	1.0361	0.27	
103	907+80.000	907+90.000	0.0019	0.051	0.100	0.0020	0.0011	0.0007	0.0009	0.0038	0.0020	0.0013	0.0018	-0.0019	-0.0009	-0.0005	-0.0010	1.0361	0.27	
104	907+90.000	913+70.000	0.1098	2.959	5.792	0.1138	0.0626	0.0427	0.0512	0.2227	0.1155	0.0738	0.1073	-0.1089	-0.0529	-0.0311	-0.0561	1.0361	0.27	
105	913+70.000	914+00.000	0.0057	0.155	0.306	0.0059	0.0033	0.0022	0.0027	0.0118	0.0061	0.0039	0.0057	-0.0058	-0.0028	-0.0017	-0.0030	1.0466	0.27	
106	914+00.000	914+30.000	0.0057	0.119	0.235	0.0046	0.0025	0.0017	0.0021	0.0090	0.0048	0.0031	0.0042	-0.0045	-0.0023	-0.0014	-0.0022	0.8058	0.27	
107	914+30.000	914+40.000	0.0019	0.055	0.124	0.0021	0.0013	0.0008	0.0008	0.0048	0.0029	0.0016	0.0019	-0.0027	-0.0017	-0.0009	-0.0010	1.1098	0.37	
108	914+40.000	915+40.000	0.0189	0.585	1.463	0.0225	0.0134	0.0082	0.0091	0.0563	0.0342	0.0192	0.0221	-0.0338	-0.0209	-0.0111	-0.0129	1.1880	0.39	
LaMesa/SD38 (v1)	915+00.000			45.389	83.561	1.7457	0.7046	0.4318	1.0411	3.2139	1.8143	0.9753	1.3996	-1.4682	-1.1097	-0.5434	-0.3585			0.47
109	915+40.000	916+00.000	0.0114	0.238	0.470	0.0092	0.0050	0.0034	0.0041	0.0181	0.0096	0.0063	0.0085	-0.0089	-0.0046	-0.0028	-0.0044	0.8058	0.27	
110	916+00.000	921+00.000	0.0947	1.964	3.844	0.0755	0.0416	0.0284	0.0340	0.1479	0.0785	0.0512	0.0694	-0.0723	-0.0369	-0.0229	-0.0354	0.7977	0.26	
111	921+00.000	921+90.000	0.0170	0.353	0.692	0.0136	0.0075	0.0051	0.0061	0.0266	0.0141	0.0092	0.0125	-0.0130	-0.0066	-0.0041	-0.0064	0.7977	0.26	
112	921+90.000	922+00.000	0.0019	0.039	0.077	0.0015	0.0008	0.0006	0.0007	0.0030	0.0016	0.0010	0.0014	-0.0014	-0.0007	-0.0005	-0.0007	0.7977	0.26	
113	922+00.000	922+59.000	0.0112	0.232	0.454	0.0089	0.0049	0.0033	0.0040	0.0174	0.0093	0.0060	0.0082	-0.0085	-0.0044	-0.0027	-0.0042	0.7977	0.26	
114	922+59.000	923+00.000	0.0078	0.161	0.315	0.0062	0.0034	0.0023	0.0028	0.0121	0.0064	0.0042	0.0057	-0.0059	-0.0030	-0.0019	-0.0029	0.7977	0.26	

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected FI no/C Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted FI no/C Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) FI no/C Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
115	923+00.000	941+70.000	0.3542	11.752	14.377	0.4520	0.2940	0.2007	0.1580	0.5530	0.2935	0.1916	0.2595	-0.1009	0.0006	0.0091	-0.1015	1.2763	0.42	
116	941+70.000	948+50.000	0.1288	2.671	5.228	0.1027	0.0565	0.0386	0.0462	0.2011	0.1067	0.0697	0.0944	-0.0983	-0.0502	-0.0311	-0.0481	0.7977	0.26	
All Segments			6.8845	409.421	399.083	15.7469	8.7474	5.6810	6.9996	15.3493	8.5222	4.9517	6.8271	0.3976	0.2252	0.7293	0.1724	2.2873	0.60	
All Intersections				212.085	427.197	8.1571	3.8625	2.1827	4.2946	16.4306	8.2648	4.3625	8.1659	-8.2735	-4.4022	-2.1798	-3.8713			0.25
Total			6.8845	621.506	826.279	23.9041	12.6099	7.8637	11.2942	31.7800	16.7869	9.3142	14.9930	-7.8759	-4.1770	-1.4505	-3.6989	3.4722		

Table 13. Expected Crash Frequencies and Rates by Horizontal Design Element (Section 3)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected FI no/C Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted FI no/C Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) FI no/C Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)
Tangent	585+00.000	594+84.940	0.1865	12.419	12.987	0.4777	0.3553	0.2214	0.1223	0.4995	0.2945	0.1563	0.2050	-0.0218	0.0608	0.0652	-0.0826	2.5607	0.59
Simple Curve 1	594+84.940	609+21.930	0.2722	49.017	28.760	1.8853	0.8216	0.5119	1.0637	1.1062	0.6443	0.3342	0.4618	0.7791	0.1773	0.1778	0.6019	6.9271	1.30
Tangent	609+21.930	624+64.300	0.2921	22.007	29.094	0.8464	0.4103	0.2557	0.4361	1.1190	0.6472	0.3310	0.4719	-0.2726	-0.2368	-0.0754	-0.0358	2.8975	0.53
Simple Curve 2	624+64.300	624+64.530	0.0000	0.003	0.004	0.0001	0.0001	0.0000	0.0001	0.0002	0.0001	0.0000	0.0001	-0.0000	-0.0000	-0.0000	0.0000	3.0271	0.55
Tangent	624+64.530	636+92.820	0.2326	10.091	21.149	0.3881	0.2351	0.1465	0.1530	0.8134	0.4704	0.2406	0.3430	-0.4253	-0.2353	-0.0941	-0.1900	1.6685	0.30
Simple Curve 3	636+92.820	647+26.050	0.1957	17.075	19.003	0.6567	0.2830	0.1763	0.3738	0.7309	0.4227	0.2162	0.3082	-0.0742	-0.1397	-0.0399	0.0656	3.3560	0.61
Tangent	647+26.050	672+86.110	0.4849	37.317	44.231	1.4353	0.6571	0.4094	0.7782	1.7012	0.9838	0.5033	0.7173	-0.2659	-0.3267	-0.0938	0.0608	2.9602	0.54
Simple Curve 4	672+86.110	683+82.710	0.2077	65.406	16.578	2.5156	1.8085	1.1271	0.7071	0.6376	0.3734	0.1957	0.2642	1.8780	1.4351	0.9314	0.4429	12.1123	2.27
Tangent	683+82.710	693+85.010	0.1898	5.075	10.371	0.1952	0.1188	0.0745	0.0764	0.3989	0.2390	0.1308	0.1599	-0.2037	-0.1202	-0.0563	-0.0835	1.0282	0.29
Simple Curve 5	693+85.010	710+47.850	0.3149	7.953	16.248	0.3059	0.1778	0.1157	0.1281	0.6249	0.3564	0.2105	0.2685	-0.3191	-0.1786	-0.0949	-0.1405	0.9712	0.30
Tangent	710+47.850	727+51.450	0.3227	19.279	12.636	0.7415	0.3343	0.2282	0.4072	0.4860	0.2585	0.1691	0.2275	0.2555	0.0758	0.0590	0.1798	2.2982	0.78
Simple Curve 6	727+51.450	727+52.350	0.0002	0.003	0.007	0.0001	0.0001	0.0000	0.0001	0.0003	0.0001	0.0001	0.0001	-0.0001	-0.0001	-0.0000	-0.0001	0.7724	0.26
Tangent	727+52.350	765+52.550	0.7197	14.661	28.827	0.5639	0.3116	0.2115	0.2523	1.1087	0.5947	0.3856	0.5140	-0.5448	-0.2832	-0.1742	-0.2617	0.7835	0.27
Simple Curve 7	765+52.550	780+45.930	0.2828	10.095	11.536	0.3883	0.1595	0.1080	0.2288	0.4437	0.2396	0.1542	0.2041	-0.0554	-0.0801	-0.0462	0.0247	1.3728	0.47
Tangent	780+45.930	948+50.000	3.1826	139.017	147.652	5.3468	3.0744	2.0947	2.2724	5.6789	2.9974	1.9239	2.6815	-0.3321	0.0770	0.1708	-0.4091	1.6800	0.50

Table 14. Predicted Crash Frequencies by Year (Section 3)

Year	Total Crashes	FI Crashes	Percent FI (%)	FI/no C Crashes	Percent FI/no C (%)	PDO Crashes	Percent PDO (%)
2025	17.10	9.05	52.953	5.50	32.182	8.04	47.047
2026	18.92	9.99	52.834	6.00	31.718	8.92	47.166
2027	20.77	10.95	52.723	6.50	31.292	9.82	47.277
2028	22.64	11.91	52.621	7.00	30.897	10.73	47.379
2029	24.55	12.90	52.526	7.50	30.531	11.66	47.474
2030	25.25	13.26	52.510	7.68	30.401	11.99	47.490
2031	25.95	13.62	52.496	7.86	30.274	12.33	47.504
2032	26.66	13.99	52.483	8.04	30.152	12.67	47.517
2033	27.37	14.36	52.473	8.22	30.033	13.01	47.527
2034	28.08	14.73	52.463	8.40	29.919	13.35	47.537
2035	28.79	15.10	52.455	8.58	29.808	13.69	47.545
2036	29.60	15.53	52.480	8.79	29.696	14.06	47.520
2037	30.44	15.99	52.522	9.01	29.586	14.45	47.478
2038	31.29	16.45	52.563	9.22	29.480	14.84	47.437
2039	32.13	16.90	52.602	9.44	29.377	15.23	47.398
2040	32.97	17.36	52.641	9.65	29.277	15.61	47.359
2041	34.37	18.12	52.725	10.01	29.109	16.25	47.275
2042	35.74	18.88	52.809	10.35	28.949	16.87	47.191
2043	37.09	19.62	52.889	10.68	28.796	17.47	47.111
2044	38.42	20.35	52.968	11.01	28.651	18.07	47.032
2045	39.74	21.08	53.043	11.33	28.511	18.66	46.957
2046	41.06	21.81	53.116	11.65	28.377	19.25	46.884
2047	42.37	22.54	53.186	11.97	28.248	19.84	46.814
2048	43.69	23.26	53.253	12.29	28.124	20.42	46.747
2049	44.99	23.99	53.319	12.60	28.005	21.00	46.681
2050	46.30	24.72	53.382	12.91	27.889	21.59	46.618
Total	826.28	436.46	52.822	242.17	29.308	389.82	47.178
Average	31.78	16.79	52.822	9.31	29.308	14.99	47.178

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 15. Expected Crash Frequencies by Year (Section 3)

Year	Total Crashes	FI Crashes	Percent FI (%)	FI/no C Crashes	Percent FI/no C (%)	PDO Crashes	Percent PDO (%)
2025	12.86	6.80	52.883	4.64	36.123	6.06	47.117
2026	14.23	7.51	52.764	5.07	35.602	6.72	47.236
2027	15.62	8.22	52.653	5.49	35.123	7.39	47.347
2028	17.03	8.95	52.551	5.91	34.680	8.08	47.450
2029	18.47	9.69	52.457	6.33	34.269	8.78	47.544
2030	18.99	9.96	52.440	6.48	34.123	9.03	47.561
2031	19.52	10.23	52.426	6.63	33.981	9.29	47.575
2032	20.05	10.51	52.414	6.79	33.843	9.54	47.587
2033	20.59	10.79	52.403	6.94	33.711	9.80	47.598
2034	21.12	11.06	52.393	7.09	33.582	10.05	47.608
2035	21.66	11.35	52.385	7.25	33.457	10.31	47.616
2036	22.26	11.67	52.410	7.42	33.332	10.59	47.590
2037	22.90	12.01	52.452	7.60	33.209	10.89	47.549
2038	23.53	12.35	52.493	7.79	33.089	11.18	47.508
2039	24.16	12.69	52.532	7.97	32.974	11.47	47.468
2040	24.80	13.04	52.571	8.15	32.862	11.76	47.429
2041	25.85	13.61	52.655	8.45	32.673	12.24	47.345
2042	26.89	14.18	52.739	8.74	32.493	12.71	47.261
2043	27.90	14.73	52.819	9.02	32.322	13.16	47.181
2044	28.90	15.29	52.897	9.29	32.158	13.61	47.102
2045	29.89	15.84	52.972	9.57	32.002	14.06	47.027
2046	30.89	16.38	53.045	9.84	31.852	14.50	46.954
2047	31.87	16.93	53.115	10.11	31.707	14.94	46.884
2048	32.86	17.48	53.183	10.37	31.568	15.38	46.816
2049	33.84	18.02	53.248	10.64	31.434	15.82	46.751
2050	34.83	18.57	53.311	10.90	31.304	16.26	46.687
Total	621.51	327.86	52.752	204.46	32.897	293.65	47.248
Average	23.90	12.61	52.752	7.86	32.897	11.29	47.248

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 16. Comparing Predicted and Expected Crashes for the Evaluation Period (Section 3)

Scope	Total Crashes	FI Crashes	Percent FI (%)	FI/no C Crashes	Percent FI/no C (%)	PDO Crashes	Percent PDO (%)
Predicted	826.28	436.46	52.822	242.17	29.308	389.82	47.178
Expected	621.51	327.86	52.752	204.46	32.897	293.65	47.248
Expected - Predicted	-204.77	-108.60		-37.71		-96.17	
Percent Difference	-32.95	-33.12		-18.45		-32.75	

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 17. Expected Crash Severity by Ramp Terminal or Roundabout (Section 3)

Seg. No.	Type	Fatal (K) Crashes (crashes)	Incapacitating Injury (A) Crashes (crashes)	Non-Incapacitating Injury (B) Crashes (crashes)	Possible Injury (C) Crashes (crashes)	No Injury (O) Crashes (crashes)
4	FRERampTerminal	0.1307	0.6864	2.2706	7.9648	9.1729

Table 18. Expected Crash Type Distribution (Section 3)

Element Type	Crash Type	FI Crashes	Percent FI (%)	FI/no C Crashes	Percent FI/no C (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Single	103.33	16.6	77.46	12.5	88.79	14.3	194.37	31.3
Highway Segment	Total Single Vehicle Crashes	103.33	16.6	77.46	12.5	88.79	14.3	194.37	31.3
Highway Segment	Angle Collision	49.47	8.0	30.59	4.9	39.07	6.3	88.51	14.2
Highway Segment	Head-on Collision	4.99	0.8	4.63	0.7	0.26	0.0	3.14	0.5
Highway Segment	Rear-end Collision	55.08	8.9	24.98	4.0	29.18	4.7	76.94	12.4
Highway Segment	Sideswipe	8.80	1.4	4.99	0.8	16.33	2.6	30.07	4.8
Highway Segment	Total Multiple Vehicle Crashes	118.34	19.0	65.19	10.5	84.84	13.7	198.66	32.0
Highway Segment	Total Highway Segment Crashes	227.43	36.6	147.71	23.8	181.99	29.3	409.42	65.9
Highway Segment	Other Collision	5.76	0.9	5.06	0.8	8.36	1.3	16.40	2.6
Intersection	Single	13.98	2.2	11.95	1.9	24.92	4.0	39.47	6.4
Intersection	Total Single Vehicle Crashes	13.98	2.2	11.95	1.9	24.92	4.0	39.47	6.4
Intersection	Angle Collision	45.97	7.4	30.94	5.0	28.84	4.6	72.86	11.7
Intersection	Head-on Collision	1.87	0.3	1.53	0.2	1.59	0.3	3.36	0.5
Intersection	Rear-end Collision	19.40	3.1	6.39	1.0	25.46	4.1	45.10	7.3
Intersection	Sideswipe	3.92	0.6	2.40	0.4	16.14	2.6	21.11	3.4
Intersection	Total Multiple Vehicle Crashes	71.17	11.5	41.26	6.6	72.04	11.6	142.42	22.9
Intersection	Total Intersection Crashes	89.45	14.4	56.75	9.1	102.46	16.5	191.69	30.9
Intersection	Other Collision	4.30	0.7	3.54	0.6	5.51	0.9	9.81	1.6
Ramp Terminal	Collision with Animal	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
Ramp Terminal	Collision with Fixed Object	0.86	0.1	0.00	0.0	1.45	0.2	2.31	0.4
Ramp Terminal	Collision with Other Object	0.00	0.0	0.00	0.0	0.05	0.0	0.05	0.0
Ramp Terminal	Other Single-vehicle Collision	0.72	0.1	0.00	0.0	0.24	0.0	0.96	0.2
Ramp Terminal	Collision with Parked Vehicle	0.08	0.0	0.00	0.0	0.14	0.0	0.21	0.0
Ramp Terminal	Total Single Vehicle Crashes	1.66	0.3	0.00	0.0	1.87	0.3	3.53	0.6
Ramp Terminal	Angle Collision	5.77	0.9	0.00	0.0	3.41	0.5	9.18	1.5

Element Type	Crash Type	FI Crashes	Percent FI (%)	FI/no C Crashes	Percent FI/no C (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Ramp Terminal	Head-on Collision	0.22	0.0	0.00	0.0	0.14	0.0	0.36	0.1
Ramp Terminal	Other Multiple-vehicle Collision	0.14	0.0	0.00	0.0	0.24	0.0	0.38	0.1
Ramp Terminal	Rear-end Collision	3.04	0.5	0.00	0.0	2.53	0.4	5.57	0.9
Ramp Terminal	Sideswipe, Same Direction Collision	0.22	0.0	0.00	0.0	0.98	0.2	1.20	0.2
Ramp Terminal	Total Multiple Vehicle Crashes	9.39	1.5	0.00	0.0	7.30	1.2	16.70	2.7
Ramp Terminal	Total Ramp Terminal Crashes	11.05	1.8	0.00	0.0	9.17	1.5	20.23	3.3
	Total Crashes	327.94	52.8	204.46	32.9	293.62	47.3	621.34	100.0

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 19. Evaluation Message

Start Location (Sta. ft)	End Location (Sta. ft)	Message
585+00.000	594+84.940	Warning: for segment #1 (585+00.000 to 594+84.940), no foreslope data available for left side of road for use by AFM3ru, using 1.0
585+00.000	594+84.940	Warning: for segment #1 (585+00.000 to 594+84.940), no foreslope data available for right side of road for use by AFM3ru, using 1.0
594+84.940	600+00.000	Warning: for segment #2 (594+84.940 to 600+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
594+84.940	600+00.000	Warning: for segment #2 (594+84.940 to 600+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
600+00.000	601+00.000	Warning: for segment #3 (600+00.000 to 601+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
600+00.000	601+00.000	Warning: for segment #3 (600+00.000 to 601+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
601+00.000	602+00.000	Warning: for segment #4 (601+00.000 to 602+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
601+00.000	602+00.000	Warning: for segment #4 (601+00.000 to 602+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
602+00.000	605+00.000	Warning: for segment #5 (602+00.000 to 605+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
602+00.000	605+00.000	Warning: for segment #5 (602+00.000 to 605+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+00.000	605+60.000	Warning: for segment #6 (605+00.000 to 605+60.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+00.000	605+60.000	Warning: for segment #6 (605+00.000 to 605+60.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+60.000	605+70.000	Warning: for segment #7 (605+60.000 to 605+70.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+60.000	605+70.000	Warning: for segment #7 (605+60.000 to 605+70.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+70.000	605+75.000	Warning: for segment #8 (605+70.000 to 605+75.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+70.000	605+75.000	Warning: for segment #8 (605+70.000 to 605+75.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+75.000	609+00.000	Warning: for segment #9 (605+75.000 to 609+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+75.000	609+00.000	Warning: for segment #9 (605+75.000 to 609+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
609+00.000	609+21.930	Warning: for segment #10 (609+00.000 to 609+21.930), no foreslope data available for left side of road for use by AFM3ru, using 1.0
609+00.000	609+21.930	Warning: for segment #10 (609+00.000 to 609+21.930), no foreslope data available for right side of road for use by AFM3ru, using 1.0
609+21.930	611+40.000	Warning: for segment #11 (609+21.930 to 611+40.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
609+21.930	611+40.000	Warning: for segment #11 (609+21.930 to 611+40.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
611+40.000	612+50.000	Warning: for segment #12 (611+40.000 to 612+50.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
611+40.000	612+50.000	Warning: for segment #12 (611+40.000 to 612+50.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
612+50.000	624+64.530	Warning: for segment #13 (612+50.000 to 624+64.530), no foreslope data available for left side of road for use by AFM3ru, using 1.0
612+50.000	624+64.530	Warning: for segment #13 (612+50.000 to 624+64.530), no foreslope data available for right side of road for use by AFM3ru, using 1.0
624+64.530	636+92.820	Warning: for segment #14 (624+64.530 to 636+92.820), no foreslope data available for left side of road for use by AFM3ru, using 1.0
624+64.530	636+92.820	Warning: for segment #14 (624+64.530 to 636+92.820), no foreslope data available for right side of road for use by AFM3ru, using 1.0
636+92.820	639+00.000	Warning: for segment #15 (636+92.820 to 639+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
636+92.820	639+00.000	Warning: for segment #15 (636+92.820 to 639+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0

Start Location (Sta. ft)	End Location (Sta. ft)	Message
639+00.000	640+00.000	Warning: for segment #16 (639+00.000 to 640+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
639+00.000	640+00.000	Warning: for segment #16 (639+00.000 to 640+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
640+00.000	647+26.050	Warning: for segment #17 (640+00.000 to 647+26.050), no foreslope data available for left side of road for use by AFM3ru, using 1.0
640+00.000	647+26.050	Warning: for segment #17 (640+00.000 to 647+26.050), no foreslope data available for right side of road for use by AFM3ru, using 1.0
647+26.050	667+80.000	Warning: for segment #18 (647+26.050 to 667+80.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
647+26.050	667+80.000	Warning: for segment #18 (647+26.050 to 667+80.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
667+80.000	668+80.000	Warning: for segment #19 (667+80.000 to 668+80.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
667+80.000	668+80.000	Warning: for segment #19 (667+80.000 to 668+80.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
668+80.000	672+86.110	Warning: for segment #20 (668+80.000 to 672+86.110), no foreslope data available for left side of road for use by AFM3ru, using 1.0
668+80.000	672+86.110	Warning: for segment #20 (668+80.000 to 672+86.110), no foreslope data available for right side of road for use by AFM3ru, using 1.0
672+86.110	676+00.000	Warning: for segment #21 (672+86.110 to 676+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
672+86.110	676+00.000	Warning: for segment #21 (672+86.110 to 676+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
676+00.000	677+50.000	Warning: for segment #22 (676+00.000 to 677+50.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
676+00.000	677+50.000	Warning: for segment #22 (676+00.000 to 677+50.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
677+50.000	679+00.000	Warning: for segment #23 (677+50.000 to 679+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
677+50.000	679+00.000	Warning: for segment #23 (677+50.000 to 679+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
679+00.000	680+80.000	Warning: for segment #24 (679+00.000 to 680+80.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
679+00.000	680+80.000	Warning: for segment #24 (679+00.000 to 680+80.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
680+80.000	680+90.000	Warning: for segment #25 (680+80.000 to 680+90.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
680+80.000	680+90.000	Warning: for segment #25 (680+80.000 to 680+90.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
680+90.000	682+20.000	Warning: for segment #26 (680+90.000 to 682+20.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
680+90.000	682+20.000	Warning: for segment #26 (680+90.000 to 682+20.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
682+20.000	683+82.710	Warning: for segment #27 (682+20.000 to 683+82.710), no foreslope data available for left side of road for use by AFM3ru, using 1.0
682+20.000	683+82.710	Warning: for segment #27 (682+20.000 to 683+82.710), no foreslope data available for right side of road for use by AFM3ru, using 1.0
683+82.710	691+50.000	Warning: for segment #28 (683+82.710 to 691+50.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
683+82.710	691+50.000	Warning: for segment #28 (683+82.710 to 691+50.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
691+50.000	692+70.000	Warning: for segment #29 (691+50.000 to 692+70.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
691+50.000	692+70.000	Warning: for segment #29 (691+50.000 to 692+70.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
692+70.000	693+85.010	Warning: for segment #30 (692+70.000 to 693+85.010), no foreslope data available for left side of road for use by AFM3ru, using 1.0
692+70.000	693+85.010	Warning: for segment #30 (692+70.000 to 693+85.010), no foreslope data available for right side of road for use by AFM3ru, using 1.0
693+85.010	698+70.000	Warning: for segment #31 (693+85.010 to 698+70.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
693+85.010	698+70.000	Warning: for segment #31 (693+85.010 to 698+70.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0

Start Location (Sta. ft)	End Location (Sta. ft)	Message
698+70.000	699+00.000	Warning: for segment #32 (698+70.000 to 699+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
698+70.000	699+00.000	Warning: for segment #32 (698+70.000 to 699+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
699+00.000	699+20.000	Warning: for segment #33 (699+00.000 to 699+20.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
699+00.000	699+20.000	Warning: for segment #33 (699+00.000 to 699+20.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
699+20.000	700+40.000	Warning: for segment #34 (699+20.000 to 700+40.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
699+20.000	700+40.000	Warning: for segment #34 (699+20.000 to 700+40.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
709+00.000	710+30.000	Warning: for segment #43 (709+00.000 to 710+30.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
709+00.000	710+30.000	Warning: for segment #43 (709+00.000 to 710+30.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
755+50.000	756+90.000	Warning: for segment #49 (755+50.000 to 756+90.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
755+50.000	756+90.000	Warning: for segment #49 (755+50.000 to 756+90.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
777+80.000	778+80.000	Warning: for segment #56 (777+80.000 to 778+80.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
777+80.000	778+80.000	Warning: for segment #56 (777+80.000 to 778+80.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
808+80.000	809+00.000	Warning: for segment #69 (808+80.000 to 809+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
808+80.000	809+00.000	Warning: for segment #69 (808+80.000 to 809+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
809+00.000	809+60.000	Warning: for segment #70 (809+00.000 to 809+60.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
809+00.000	809+60.000	Warning: for segment #70 (809+00.000 to 809+60.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
861+85.000	862+00.000	Warning: for segment #82 (861+85.000 to 862+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
861+85.000	862+00.000	Warning: for segment #82 (861+85.000 to 862+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
862+00.000	862+50.000	Warning: for segment #83 (862+00.000 to 862+50.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
862+00.000	862+50.000	Warning: for segment #83 (862+00.000 to 862+50.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
862+50.000	862+60.000	Warning: for segment #84 (862+50.000 to 862+60.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
862+50.000	862+60.000	Warning: for segment #84 (862+50.000 to 862+60.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
888+20.000	889+30.000	Warning: for segment #94 (888+20.000 to 889+30.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
888+20.000	889+30.000	Warning: for segment #94 (888+20.000 to 889+30.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
914+30.000	914+40.000	Warning: for segment #107 (914+30.000 to 914+40.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
914+30.000	914+40.000	Warning: for segment #107 (914+30.000 to 914+40.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
914+40.000	915+40.000	Warning: for segment #108 (914+40.000 to 915+40.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
914+40.000	915+40.000	Warning: for segment #108 (914+40.000 to 915+40.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
585+00.000	594+84.940	Warning: for segment #1 (585+00.000 to 594+84.940), no foreslope data available for left side of road for use by AFM3ru, using 1.0
585+00.000	594+84.940	Warning: for segment #1 (585+00.000 to 594+84.940), no foreslope data available for right side of road for use by AFM3ru, using 1.0
594+84.940	600+00.000	Warning: for segment #2 (594+84.940 to 600+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
594+84.940	600+00.000	Warning: for segment #2 (594+84.940 to 600+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0

Start Location (Sta. ft)	End Location (Sta. ft)	Message
600+00.000	601+00.000	Warning: for segment #3 (600+00.000 to 601+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
600+00.000	601+00.000	Warning: for segment #3 (600+00.000 to 601+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
601+00.000	602+00.000	Warning: for segment #4 (601+00.000 to 602+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
601+00.000	602+00.000	Warning: for segment #4 (601+00.000 to 602+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
602+00.000	605+00.000	Warning: for segment #5 (602+00.000 to 605+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
602+00.000	605+00.000	Warning: for segment #5 (602+00.000 to 605+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+00.000	605+60.000	Warning: for segment #6 (605+00.000 to 605+60.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+00.000	605+60.000	Warning: for segment #6 (605+00.000 to 605+60.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+60.000	605+70.000	Warning: for segment #7 (605+60.000 to 605+70.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+60.000	605+70.000	Warning: for segment #7 (605+60.000 to 605+70.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+70.000	605+75.000	Warning: for segment #8 (605+70.000 to 605+75.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+70.000	605+75.000	Warning: for segment #8 (605+70.000 to 605+75.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+75.000	609+00.000	Warning: for segment #9 (605+75.000 to 609+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+75.000	609+00.000	Warning: for segment #9 (605+75.000 to 609+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
609+00.000	609+21.930	Warning: for segment #10 (609+00.000 to 609+21.930), no foreslope data available for left side of road for use by AFM3ru, using 1.0
609+00.000	609+21.930	Warning: for segment #10 (609+00.000 to 609+21.930), no foreslope data available for right side of road for use by AFM3ru, using 1.0
609+21.930	611+40.000	Warning: for segment #11 (609+21.930 to 611+40.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
609+21.930	611+40.000	Warning: for segment #11 (609+21.930 to 611+40.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
611+40.000	612+50.000	Warning: for segment #12 (611+40.000 to 612+50.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
611+40.000	612+50.000	Warning: for segment #12 (611+40.000 to 612+50.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
612+50.000	624+64.530	Warning: for segment #13 (612+50.000 to 624+64.530), no foreslope data available for left side of road for use by AFM3ru, using 1.0
612+50.000	624+64.530	Warning: for segment #13 (612+50.000 to 624+64.530), no foreslope data available for right side of road for use by AFM3ru, using 1.0
624+64.530	636+92.820	Warning: for segment #14 (624+64.530 to 636+92.820), no foreslope data available for left side of road for use by AFM3ru, using 1.0
624+64.530	636+92.820	Warning: for segment #14 (624+64.530 to 636+92.820), no foreslope data available for right side of road for use by AFM3ru, using 1.0
636+92.820	639+00.000	Warning: for segment #15 (636+92.820 to 639+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
636+92.820	639+00.000	Warning: for segment #15 (636+92.820 to 639+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
639+00.000	640+00.000	Warning: for segment #16 (639+00.000 to 640+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
639+00.000	640+00.000	Warning: for segment #16 (639+00.000 to 640+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
640+00.000	647+26.050	Warning: for segment #17 (640+00.000 to 647+26.050), no foreslope data available for left side of road for use by AFM3ru, using 1.0
640+00.000	647+26.050	Warning: for segment #17 (640+00.000 to 647+26.050), no foreslope data available for right side of road for use by AFM3ru, using 1.0
647+26.050	667+80.000	Warning: for segment #18 (647+26.050 to 667+80.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
647+26.050	667+80.000	Warning: for segment #18 (647+26.050 to 667+80.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0

Start Location (Sta. ft)	End Location (Sta. ft)	Message
667+80.000	668+80.000	Warning: for segment #19 (667+80.000 to 668+80.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
667+80.000	668+80.000	Warning: for segment #19 (667+80.000 to 668+80.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
668+80.000	672+86.110	Warning: for segment #20 (668+80.000 to 672+86.110), no foreslope data available for left side of road for use by AFM3ru, using 1.0
668+80.000	672+86.110	Warning: for segment #20 (668+80.000 to 672+86.110), no foreslope data available for right side of road for use by AFM3ru, using 1.0
672+86.110	676+00.000	Warning: for segment #21 (672+86.110 to 676+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
672+86.110	676+00.000	Warning: for segment #21 (672+86.110 to 676+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
676+00.000	677+50.000	Warning: for segment #22 (676+00.000 to 677+50.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
676+00.000	677+50.000	Warning: for segment #22 (676+00.000 to 677+50.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
677+50.000	679+00.000	Warning: for segment #23 (677+50.000 to 679+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
677+50.000	679+00.000	Warning: for segment #23 (677+50.000 to 679+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
679+00.000	680+80.000	Warning: for segment #24 (679+00.000 to 680+80.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
679+00.000	680+80.000	Warning: for segment #24 (679+00.000 to 680+80.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
680+80.000	680+90.000	Warning: for segment #25 (680+80.000 to 680+90.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
680+80.000	680+90.000	Warning: for segment #25 (680+80.000 to 680+90.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
680+90.000	682+20.000	Warning: for segment #26 (680+90.000 to 682+20.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
680+90.000	682+20.000	Warning: for segment #26 (680+90.000 to 682+20.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
682+20.000	683+82.710	Warning: for segment #27 (682+20.000 to 683+82.710), no foreslope data available for left side of road for use by AFM3ru, using 1.0
682+20.000	683+82.710	Warning: for segment #27 (682+20.000 to 683+82.710), no foreslope data available for right side of road for use by AFM3ru, using 1.0
683+82.710	691+50.000	Warning: for segment #28 (683+82.710 to 691+50.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
683+82.710	691+50.000	Warning: for segment #28 (683+82.710 to 691+50.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
691+50.000	692+70.000	Warning: for segment #29 (691+50.000 to 692+70.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
691+50.000	692+70.000	Warning: for segment #29 (691+50.000 to 692+70.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
692+70.000	693+85.010	Warning: for segment #30 (692+70.000 to 693+85.010), no foreslope data available for left side of road for use by AFM3ru, using 1.0
692+70.000	693+85.010	Warning: for segment #30 (692+70.000 to 693+85.010), no foreslope data available for right side of road for use by AFM3ru, using 1.0
693+85.010	698+70.000	Warning: for segment #31 (693+85.010 to 698+70.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
693+85.010	698+70.000	Warning: for segment #31 (693+85.010 to 698+70.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
698+70.000	699+00.000	Warning: for segment #32 (698+70.000 to 699+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
698+70.000	699+00.000	Warning: for segment #32 (698+70.000 to 699+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
699+00.000	699+20.000	Warning: for segment #33 (699+00.000 to 699+20.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
699+00.000	699+20.000	Warning: for segment #33 (699+00.000 to 699+20.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
699+20.000	700+40.000	Warning: for segment #34 (699+20.000 to 700+40.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
699+20.000	700+40.000	Warning: for segment #34 (699+20.000 to 700+40.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0

Start Location (Sta. ft)	End Location (Sta. ft)	Message
709+00.000	710+30.000	Warning: for segment #43 (709+00.000 to 710+30.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
709+00.000	710+30.000	Warning: for segment #43 (709+00.000 to 710+30.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
755+50.000	756+90.000	Warning: for segment #49 (755+50.000 to 756+90.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
755+50.000	756+90.000	Warning: for segment #49 (755+50.000 to 756+90.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
777+80.000	778+80.000	Warning: for segment #56 (777+80.000 to 778+80.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
777+80.000	778+80.000	Warning: for segment #56 (777+80.000 to 778+80.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
808+80.000	809+00.000	Warning: for segment #69 (808+80.000 to 809+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
808+80.000	809+00.000	Warning: for segment #69 (808+80.000 to 809+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
809+00.000	809+60.000	Warning: for segment #70 (809+00.000 to 809+60.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
809+00.000	809+60.000	Warning: for segment #70 (809+00.000 to 809+60.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
861+85.000	862+00.000	Warning: for segment #82 (861+85.000 to 862+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
861+85.000	862+00.000	Warning: for segment #82 (861+85.000 to 862+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
862+00.000	862+50.000	Warning: for segment #83 (862+00.000 to 862+50.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
862+00.000	862+50.000	Warning: for segment #83 (862+00.000 to 862+50.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
862+50.000	862+60.000	Warning: for segment #84 (862+50.000 to 862+60.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
862+50.000	862+60.000	Warning: for segment #84 (862+50.000 to 862+60.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
888+20.000	889+30.000	Warning: for segment #94 (888+20.000 to 889+30.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
888+20.000	889+30.000	Warning: for segment #94 (888+20.000 to 889+30.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
914+30.000	914+40.000	Warning: for segment #107 (914+30.000 to 914+40.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
914+30.000	914+40.000	Warning: for segment #107 (914+30.000 to 914+40.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
914+40.000	915+40.000	Warning: for segment #108 (914+40.000 to 915+40.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
914+40.000	915+40.000	Warning: for segment #108 (914+40.000 to 915+40.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0

Section 4 Evaluation

Section: Section 4
Evaluation Start Location: 948+50.000
Evaluation End Location: 974+11.000
Area Type: Urban

Functional Class: Arterial
Type of Alignment: Undivided, Multilane
Model Category: Urban/Suburban Arterial
Calibration Factor: 4D=1.0; 4SG=1.0; 4U=1.0;

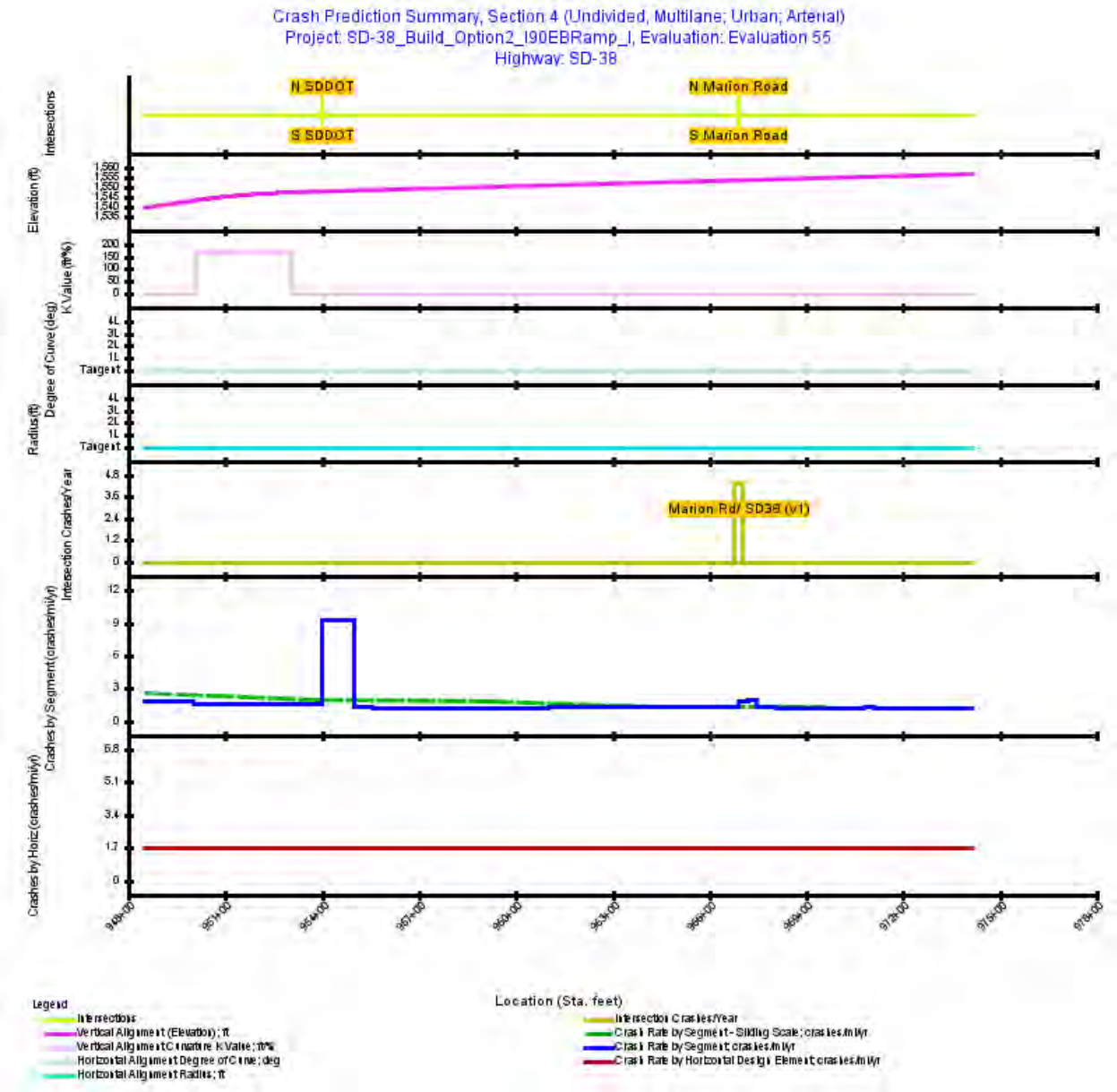

Figure 2. Crash Prediction Summary (Section 4)

Table 20. Observed Crashes Used in the Evaluation (Section 4)

Year	Observed Crashes	Total Crashes Used	FI Crashes	FI no/C Crashes	PDO Crashes
2018	5	5	4	0	1
2019	1	1	0	0	1
2020	2	2	0	0	2
2021	2	2	2	0	0
2022	2	2	0	0	2
All Years	12 [1]	12	6	0	6

Footnotes

[1] Note: Observed crash data that does not comply with the associated CPM model requirements may not be used in EB processing.

Table 21. Evaluation Highway - Homogeneous Segments (Section 4)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industial/Institutional	Number Minor Industial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
117	Urban/Suburban Arterial Segment Four-lane Undivided	948+50.000	950+00.000	150.00	0.0284	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/High	0	8.00	11.00
118	Urban/Suburban Arterial Segment Four-lane Undivided	950+00.000	954+00.000	400.00	0.0758	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/High	0	8.00	11.00
119	Urban/Suburban Arterial Segment Four-lane Undivided	954+00.000	955+00.000	100.00	0.0189	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	2	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/High	0	4.00	11.00
120	Urban/Suburban Arterial Segment Four-lane Divided	955+00.000	955+55.000	55.00	0.0104	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	4.01	Non-Traversable Median	4.01	Intermediate/High	0	8.00	11.00
121	Urban/Suburban Arterial Segment Four-lane Divided	955+55.000	958+28.000	273.00	0.0517	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	10.02	Non-Traversable Median	10.02	Intermediate/High	0	8.00	11.00
122	Urban/Suburban Arterial Segment Four-lane Divided	958+28.000	961+01.000	273.00	0.0517	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	20.03	Non-Traversable Median	19.99	Intermediate/High	0	8.00	11.00
123	Urban/Suburban Arterial Segment Four-lane Divided	961+01.000	962+00.000	99.00	0.0187	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	23.12	Traversable Median	23.12	Intermediate/High	0	8.00	11.00
124	Urban/Suburban Arterial Segment Four-lane Divided	962+00.000	963+69.000	169.00	0.0320	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	18.13	Traversable Median	30.13	Intermediate/High	0	8.00	11.00
125	Urban/Suburban Arterial Segment Four-lane Divided	963+69.000	965+00.000	131.00	0.0248	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	12.55	Traversable Median	24.55	Intermediate/High	0	8.00	11.00
126	Urban/Suburban Arterial Segment Four-lane Divided	965+00.000	966+38.000	138.00	0.0261	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	7.54	Traversable Median	19.54	Intermediate/High	0	4.00	11.00
127	Urban/Suburban Arterial Segment Four-lane Divided	966+38.000	966+70.000	32.00	0.0061	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	4.38	Traversable Median	16.38	Intermediate/High	0	4.00	11.00

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industial/Institutional	Number Minor Industial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
128	Urban/Suburban Arterial Segment Four-lane Divided	966+70.000	966+91.000	21.00	0.0040	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	3.39	Traversable Median	15.39	Intermediate/High	0	0.00	11.00
129	Urban/Suburban Arterial Segment Four-lane Undivided	966+91.000	967+14.000	23.00	0.0044	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	true	false	0.0	0.00	None	0.00	Intermediate/High	0	0.00	11.00
130	Urban/Suburban Arterial Segment Four-lane Undivided	967+14.000	967+20.000	6.00	0.0011	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	true	false	0.0	0.00	None	0.00	Intermediate/High	0	8.00	11.00
131	Urban/Suburban Arterial Segment Four-lane Undivided	967+20.000	967+45.000	25.00	0.0047	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/High	0	8.00	11.00
132	Urban/Suburban Arterial Segment Four-lane Divided	967+45.000	968+06.000	61.00	0.0116	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	4.01	Non-Traversable Median	18.01	Intermediate/High	0	8.00	11.00
133	Urban/Suburban Arterial Segment Four-lane Divided	968+06.000	970+79.000	273.00	0.0517	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	9.52	Non-Traversable Median	23.52	Intermediate/High	0	8.00	11.00
134	Urban/Suburban Arterial Segment Four-lane Divided	970+79.000	971+09.000	30.00	0.0057	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	14.53	Non-Traversable Median	14.53	Intermediate/High	0	8.00	11.00
135	Urban/Suburban Arterial Segment Four-lane Divided	971+09.000	974+11.000	302.00	0.0572	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	20.01	Non-Traversable Median	20.01	Intermediate/High	0	8.00	11.00

Table 22. Crash Highway Highway - Homogeneous Segments (Section 4)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industial/Institutional	Number Minor Industial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
117	Urban/Suburban Arterial Segment Four-lane Undivided	948+50.000	950+00.000	150.00	0.0284	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/ High	0	8.00	11.00
118	Urban/Suburban Arterial Segment Four-lane Undivided	950+00.000	954+00.000	400.00	0.0758	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/ High	0	8.00	11.00
119	Urban/Suburban Arterial Segment Four-lane Undivided	954+00.000	955+00.000	100.00	0.0189	2018-2022: 4,900	0	0	2	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/ High	0	4.00	11.00
120	Urban/Suburban Arterial Segment Four-lane Divided	955+00.000	955+55.000	55.00	0.0104	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	4.01	Non-Traversable Median	4.01	Intermediate/ High	0	8.00	11.00
121	Urban/Suburban Arterial Segment Four-lane Divided	955+55.000	958+28.000	273.00	0.0517	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	10.02	Non-Traversable Median	10.02	Intermediate/ High	0	8.00	11.00
122	Urban/Suburban Arterial Segment Four-lane Divided	958+28.000	961+01.000	273.00	0.0517	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	20.03	Non-Traversable Median	19.99	Intermediate/ High	0	8.00	11.00
123	Urban/Suburban Arterial Segment Four-lane Divided	961+01.000	962+00.000	99.00	0.0187	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	23.12	Traversable Median	23.12	Intermediate/ High	0	8.00	11.00
124	Urban/Suburban Arterial Segment Four-lane Divided	962+00.000	963+69.000	169.00	0.0320	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	18.13	Traversable Median	30.13	Intermediate/ High	0	8.00	11.00
125	Urban/Suburban Arterial Segment Four-lane Divided	963+69.000	965+00.000	131.00	0.0248	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	12.55	Traversable Median	24.55	Intermediate/ High	0	8.00	11.00
126	Urban/Suburban Arterial Segment Four-lane Divided	965+00.000	966+38.000	138.00	0.0261	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	7.54	Traversable Median	19.54	Intermediate/ High	0	4.00	11.00
127	Urban/Suburban Arterial Segment Four-lane Divided	966+38.000	966+70.000	32.00	0.0061	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	4.38	Traversable Median	16.38	Intermediate/ High	0	4.00	11.00
128	Urban/Suburban Arterial Segment Four-lane Divided	966+70.000	966+91.000	21.00	0.0040	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	3.39	Traversable Median	15.39	Intermediate/ High	0	0.00	11.00
129	Urban/Suburban Arterial Segment Four-lane Undivided	966+91.000	967+14.000	23.00	0.0044	2018-2022: 4,900	0	0	0	0	0	0	0	true	false	0.0	0.00	None	0.00	Intermediate/ High	0	0.00	11.00
130	Urban/Suburban Arterial Segment Four-lane Undivided	967+14.000	967+20.000	6.00	0.0011	2018-2022: 4,900	0	0	0	0	0	0	0	true	false	0.0	0.00	None	0.00	Intermediate/ High	0	8.00	11.00
131	Urban/Suburban Arterial Segment Four-lane Undivided	967+20.000	967+45.000	25.00	0.0047	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/ High	0	8.00	11.00
132	Urban/Suburban Arterial Segment Four-lane Divided	967+45.000	968+06.000	61.00	0.0116	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	4.01	Non-Traversable Median	18.01	Intermediate/ High	0	8.00	11.00
133	Urban/Suburban Arterial Segment Four-lane Divided	968+06.000	970+79.000	273.00	0.0517	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	9.52	Non-Traversable Median	23.52	Intermediate/ High	0	8.00	11.00
134	Urban/Suburban Arterial Segment Four-lane Divided	970+79.000	971+09.000	30.00	0.0057	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	14.53	Non-Traversable Median	14.53	Intermediate/ High	0	8.00	11.00
135	Urban/Suburban Arterial Segment Four-lane Divided	971+09.000	974+11.000	302.00	0.0572	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	20.01	Non-Traversable Median	20.01	Intermediate/ High	0	8.00	11.00

Table 23. Evaluation Intersection (Section 4)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/ day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
8	Marion Rd/ SD38 (v1)	Urban/Suburban Arterial Intersection Four-Legged Signalized	966+91.000	2025: 5,766; 2026: 5,888; 2027: 6,010; 2028: 6,132; 2029: 6,255; 2030: 6,660; 2031: 7,065; 2032: 7,470; 2033: 7,875; 2034: 8,280; 2035: 8,685; 2036: 9,090; 2037: 9,495; 2038: 9,900; 2039: 10,305; 2040: 10,710; 2041: 11,861; 2042: 13,012; 2043: 14,163; 2044: 15,314; 2045: 16,465; 2046: 17,616; 2047: 18,767; 2048: 19,918; 2049: 21,069; 2050: 22,220	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	4	Signalized	4	3	0	20	false	false	false	0	0	6

Table 24. Crash History Intersection (Section 4)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
8	Marion Rd/ SD38 (v1)	Urban/Suburban Arterial Intersection Four-Legged Signalized	966+91.000	2018-2022: 5,400	2018-2022: 4,900	4	Signalized	4	3	0	20	false	false	false	0	0	6

Table 25. Expected Highway Crash Rates and Frequencies Summary (Section 4)

First Year of Analysis	**2025**
Last Year of Analysis	**2050**
Evaluated Length (mi)	**0.4850**
Average Future Road AADT (vpd)	**8,272**
Expected Crashes	
Total Crashes	**135.85**
Fatal and Injury Crashes	**46.51**
Property-Damage-Only Crashes	**89.34**
Percent of Total Expected Crashes	
Percent Fatal and Injury Crashes (%)	**34**
Percent Property-Damage-Only Crashes (%)	**66**
Expected Crash Rate	
Crash Rate (crashes/mi/yr)	**10.7725**
FI Crash Rate (crashes/mi/yr)	**3.6878**
PDO Crash Rate (crashes/mi/yr)	**7.0847**
Expected Travel Crash Rate	
Total Travel (million veh-mi)	**38.08**
Travel Crash Rate (crashes/million veh-mi)	**3.57**
Travel FI Crash Rate (crashes/million veh-mi)	**1.22**
Travel PDO Crash Rate (crashes/million veh-mi)	**2.35**

Table 26. Expected Crash Frequencies and Rates by Highway Segment/Intersection (Section 4)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
117	948+50.000	950+00.000	0.0284	1.343	1.459	0.0517	0.0179	0.0337	0.0561	0.0181	0.0380	-0.0044	-0.0001	-0.0043	1.8184	0.60	
118	950+00.000	954+00.000	0.0758	3.172	3.889	0.1220	0.0437	0.0783	0.1496	0.0481	0.1014	-0.0276	-0.0044	-0.0232	1.6103	0.53	
119	954+00.000	955+00.000	0.0189	4.560	6.162	0.1754	0.0651	0.1103	0.2370	0.0817	0.1553	-0.0616	-0.0167	-0.0449	9.2608	3.07	
120	955+00.000	955+55.000	0.0104	0.373	0.382	0.0143	0.0039	0.0104	0.0147	0.0039	0.0108	-0.0004	-0.0000	-0.0003	1.3757	0.46	
121	955+55.000	958+28.000	0.0517	1.685	1.897	0.0648	0.0182	0.0466	0.0730	0.0195	0.0535	-0.0082	-0.0013	-0.0069	1.2532	0.42	
122	958+28.000	961+01.000	0.0517	1.685	1.897	0.0648	0.0182	0.0466	0.0730	0.0195	0.0535	-0.0082	-0.0013	-0.0069	1.2532	0.42	
123	961+01.000	962+00.000	0.0187	0.651	0.681	0.0251	0.0069	0.0182	0.0262	0.0070	0.0192	-0.0011	-0.0001	-0.0010	1.3360	0.44	
124	962+00.000	963+69.000	0.0320	1.069	1.151	0.0411	0.0114	0.0297	0.0443	0.0118	0.0325	-0.0032	-0.0004	-0.0027	1.2842	0.42	
125	963+69.000	965+00.000	0.0248	0.850	0.901	0.0327	0.0090	0.0237	0.0347	0.0092	0.0254	-0.0020	-0.0002	-0.0017	1.3176	0.44	
126	965+00.000	966+38.000	0.0261	0.893	0.949	0.0343	0.0095	0.0249	0.0365	0.0097	0.0268	-0.0022	-0.0003	-0.0019	1.3136	0.43	
127	966+38.000	966+70.000	0.0061	0.217	0.220	0.0083	0.0023	0.0061	0.0085	0.0023	0.0062	-0.0001	0.0000	-0.0001	1.3765	0.46	
128	966+70.000	966+91.000	0.0040	0.143	0.144	0.0055	0.0015	0.0040	0.0056	0.0015	0.0041	-0.0001	0.0000	-0.0001	1.3834	0.46	
Marion Rd/ SD38 (v1)	966+91.000			114.572	49.969	4.4066	1.5303	2.8763	1.9219	0.6310	1.2909	2.4847	0.8993	1.5854			0.65
129	966+91.000	967+14.000	0.0044	0.203	0.205	0.0078	0.0027	0.0051	0.0079	0.0025	0.0054	-0.0001	0.0001	-0.0002	1.7894	0.59	
130	967+14.000	967+20.000	0.0011	0.053	0.053	0.0021	0.0007	0.0014	0.0021	0.0007	0.0014	-0.0000	0.0000	-0.0000	1.8054	0.60	
131	967+20.000	967+45.000	0.0047	0.240	0.243	0.0092	0.0031	0.0061	0.0093	0.0030	0.0063	-0.0001	0.0001	-0.0003	1.9466	0.65	
132	967+45.000	968+06.000	0.0116	0.412	0.424	0.0159	0.0043	0.0115	0.0163	0.0043	0.0120	-0.0005	-0.0000	-0.0004	1.3720	0.45	
133	968+06.000	970+79.000	0.0517	1.685	1.897	0.0648	0.0182	0.0466	0.0730	0.0195	0.0535	-0.0082	-0.0013	-0.0069	1.2532	0.42	
134	970+79.000	971+09.000	0.0057	0.206	0.208	0.0079	0.0021	0.0058	0.0080	0.0021	0.0059	-0.0001	0.0000	-0.0001	1.3915	0.46	
135	971+09.000	974+11.000	0.0572	1.842	2.098	0.0708	0.0199	0.0509	0.0807	0.0215	0.0592	-0.0099	-0.0016	-0.0083	1.2387	0.41	
All Segments			0.4850	21.280	24.862	0.8185	0.2585	0.5600	0.9562	0.2860	0.6702	-0.1378	-0.0275	-0.1102	1.6874	0.56	
All Intersections				114.572	49.969	4.4066	1.5303	2.8763	1.9219	0.6310	1.2909	2.4847	0.8993	1.5854			0.65
Total			0.4850	135.852	74.831	5.2251	1.7887	3.4363	2.8781	0.9170	1.9611	2.3470	0.8718	1.4752	10.7725		

Table 27. Expected Crash Frequencies and Rates by Horizontal Design Element (Section 4)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)
Tangent	948+50.000	974+11.000	0.4850	21.280	24.862	0.8185	0.2585	0.5600	0.9562	0.2860	0.6702	-0.1378	-0.0275	-0.1102	1.6874	0.56

Table 28. Predicted Crash Frequencies by Year (Section 4)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2025	1.54	0.47	30.768	1.07	69.232
2026	1.62	0.50	30.791	1.12	69.209
2027	1.69	0.52	30.812	1.17	69.188
2028	1.77	0.55	30.830	1.22	69.170
2029	1.85	0.57	30.847	1.28	69.153
2030	1.93	0.60	30.902	1.33	69.098
2031	2.01	0.62	30.960	1.39	69.040
2032	2.10	0.65	31.018	1.45	68.982
2033	2.18	0.68	31.078	1.50	68.922
2034	2.27	0.71	31.139	1.56	68.862
2035	2.35	0.73	31.199	1.62	68.801
2036	2.44	0.76	31.260	1.68	68.740
2037	2.53	0.79	31.321	1.74	68.679
2038	2.61	0.82	31.381	1.79	68.618
2039	2.70	0.85	31.442	1.85	68.558
2040	2.79	0.88	31.502	1.91	68.498
2041	3.01	0.95	31.680	2.06	68.320
2042	3.24	1.03	31.854	2.21	68.146
2043	3.46	1.11	32.026	2.35	67.975
2044	3.69	1.19	32.192	2.50	67.808
2045	3.92	1.27	32.354	2.65	67.646
2046	4.15	1.35	32.511	2.80	67.489
2047	4.39	1.43	32.664	2.95	67.336
2048	4.62	1.52	32.811	3.11	67.189
2049	4.86	1.60	32.954	3.26	67.046
2050	5.10	1.69	33.093	3.41	66.907
Total	74.83	23.84	31.860	50.99	68.140
Average	2.88	0.92	31.860	1.96	68.140

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 29. Expected Crash Frequencies by Year (Section 4)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2025	2.80	0.93	33.060	1.87	66.820
2026	2.94	0.97	33.085	1.96	66.798
2027	3.07	1.02	33.107	2.05	66.778
2028	3.21	1.06	33.127	2.15	66.760
2029	3.35	1.11	33.145	2.24	66.744
2030	3.50	1.16	33.205	2.34	66.691
2031	3.65	1.22	33.266	2.44	66.635
2032	3.81	1.27	33.329	2.54	66.579
2033	3.96	1.32	33.394	2.63	66.521
2034	4.12	1.38	33.458	2.74	66.463
2035	4.27	1.43	33.524	2.84	66.404
2036	4.43	1.49	33.589	2.94	66.346
2037	4.59	1.54	33.654	3.04	66.287
2038	4.75	1.60	33.719	3.14	66.228
2039	4.91	1.66	33.784	3.25	66.170
2040	5.07	1.72	33.849	3.35	66.112
2041	5.47	1.86	34.040	3.61	65.941
2042	5.88	2.01	34.228	3.86	65.772
2043	6.29	2.16	34.411	4.12	65.607
2044	6.70	2.32	34.590	4.38	65.446
2045	7.12	2.47	34.765	4.65	65.289
2046	7.54	2.63	34.934	4.91	65.138
2047	7.96	2.79	35.097	5.18	64.991
2048	8.39	2.96	35.256	5.44	64.848
2049	8.82	3.12	35.409	5.71	64.710
2050	9.26	3.29	35.558	5.98	64.577
Total	135.85	46.51	34.234	89.34	65.766
Average	5.22	1.79	34.234	3.44	65.766

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 30. Comparing Predicted and Expected Crashes for the Evaluation Period (Section 4)

Scope	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
Predicted	74.83	23.84	31.860	50.99	68.140
Expected	135.85	46.51	34.234	89.34	65.766
Expected - Predicted	61.02	22.67		38.35	
Percent Difference	44.92	48.74		42.93	

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 31. Expected Five Lane or Fewer Crash Type Distribution (Section 4)

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.21	0.2	0.21	0.2
Highway Segment	Collision with Bicycle	0.09	0.1	0.00	0.0	0.09	0.1
Highway Segment	Collision with Fixed Object	0.57	0.4	3.57	2.6	4.14	3.0
Highway Segment	Collision with Other Object	0.03	0.0	0.09	0.1	0.11	0.1
Highway Segment	Other Single-vehicle Collision	0.43	0.3	0.53	0.4	0.97	0.7
Highway Segment	Collision with Pedestrian	0.34	0.3	0.00	0.0	0.34	0.3
Highway Segment	Total Single Vehicle Crashes	1.47	1.1	4.39	3.2	5.86	4.3
Highway Segment	Angle Collision	0.37	0.3	0.54	0.4	0.91	0.7
Highway Segment	Driveway-related Collision	1.32	1.0	2.27	1.7	3.58	2.6
Highway Segment	Head-on Collision	0.17	0.1	0.05	0.0	0.21	0.2
Highway Segment	Other Multi-vehicle Collision	0.20	0.1	0.58	0.4	0.79	0.6
Highway Segment	Rear-end Collision	2.79	2.1	4.80	3.5	7.59	5.6
Highway Segment	Sideswipe, Opposite Direction Collision	0.15	0.1	0.09	0.1	0.24	0.2
Highway Segment	Sideswipe, Same Direction Collision	0.26	0.2	1.83	1.3	2.09	1.5
Highway Segment	Total Multiple Vehicle Crashes	5.25	3.9	10.16	7.5	15.42	11.3
Highway Segment	Total Highway Segment Crashes	6.72	4.9	14.56	10.7	21.28	15.7
Intersection	Collision with Animal	0.00	0.0	0.00	0.0	0.01	0.0
Intersection	Collision with Bicycle	0.73	0.5	0.00	0.0	0.73	0.5
Intersection	Collision with Fixed Object	0.90	0.7	1.71	1.3	2.61	1.9
Intersection	Non-Collision	0.17	0.1	0.07	0.0	0.24	0.2
Intersection	Collision with Other Object	0.09	0.1	0.14	0.1	0.23	0.2
Intersection	Other Single-vehicle Collision	0.05	0.0	0.04	0.0	0.09	0.1
Intersection	Collision with Parked Vehicle	0.00	0.0	0.00	0.0	0.00	0.0
Intersection	Collision with Pedestrian	0.44	0.3	0.00	0.0	0.44	0.3
Intersection	Total Intersection Single Vehicle Crashes	2.38	1.7	1.97	1.4	4.34	3.2
Intersection	Angle Collision	12.98	9.6	17.77	13.1	30.75	22.6
Intersection	Head-on Collision	1.83	1.3	2.18	1.6	4.02	3.0
Intersection	Other Multi-vehicle Collision	2.06	1.5	15.36	11.3	17.42	12.8
Intersection	Rear-end Collision	16.84	12.4	35.17	25.9	52.01	38.3
Intersection	Sideswipe	3.70	2.7	2.33	1.7	6.03	4.4
Intersection	Total Intersection Multiple Vehicle Crashes	37.41	27.5	72.82	53.6	110.23	81.1
Intersection	Total Intersection Crashes	39.79	29.3	74.78	55.0	114.57	84.3
	Total Crashes	46.51	34.2	89.34	65.8	135.85	100.0

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Interactive Highway Safety Design Model

Crash Prediction Evaluation Report

June 10, 2024

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Report Overview

Report Generated: Jun 10, 2024 10:00 AM
Report Template: System: Single Page, 508 Compliant [System] (mlcpm5, Dec 5, 2019 2:16 PM)

Evaluation Date: Mon Jun 10 10:00:02 CDT 2024
IHSDM Version: v17.0.0 (Sep 22, 2021)
Crash Prediction Module: v12.0.0 (Sep 22, 2021)

User Name: naveen.mallipaddi
Organization Name:
Phone:
E-Mail:

Project Title: SD-38_Build_Option3_I90EBRamp_I
Project Comment: Created Mon Mar 27 16:47:43 CDT 2023
Project Unit System: U.S. Customary

Highway Title: SD-38
Highway Comment: Created Mon Mar 27 16:49:47 CDT 2023
Highway Version: 17

Evaluation Title: Option3_SD19_4644th
Evaluation Comment: Created Mon Jun 10 09:58:59 CDT 2024

Minimum Location: 171+44.000
Maximum Location: 580+10.000

Policy for Superelevation: AASHTO 2011 U.S. Customary
Calibration: HSM Configuration
Crash Distribution: HSM Configuration
Model/CMF: HSM Configuration

First Year of Analysis: 2025
Last Year of Analysis: 2050
Empirical-Bayes Analysis: Site-Specific
Highway with Crash History: SD-38
Highway with Crash History Comment: Created Mon Mar 27 16:49:47 CDT 2023
Highway with Crash History Version: 17
First Year of Observed Crashes: 2018
Last Year of Observed Crashes: 2022

Disclaimer Regarding Crash Prediction Method

IMPORTANT NOTICE ABOUT COMPARING RESULTS FROM HIGHWAY SAFETY MANUAL FIRST EDITION (2010) MODELS TO RESULTS FROM NEW MODELS DEVELOPED UNDER NCHRP PROJECTS 17-70, 17-58, AND 17-68

Since the publication of the Highway Safety Manual - First Edition (HSM-1), in 2010 by the American Association of State Highway and Transportation Officials (AASHTO), multiple research efforts have been undertaken through the National Cooperative Highway Research Program (NCHRP) to develop safety performance models for road segment and intersection facility types that were not initially reflected in the HSM-1, in order to expand the breadth and depth of the HSM in the future.

The IHSDM Crash Prediction Module (CPM) is intended as a faithful implementation of HSM Part C predictive methods. As NCHRP projects to develop new predictive methods for the HSM are completed, FHWA works to incorporate the new methods into IHSDM, sometimes in advance of publication in the HSM. The following new crash predictive methods have been accepted by NCHRP project panels and incorporated into IHSDM, while pending AASHTO's approval for incorporation into a future edition of the HSM:

- Roundabouts: completed in 2018 under NCHRP Project 17-70, the new methods will provide improved outcomes for the safety analysis of roundabouts.
- 6+ lane and one-way urban/suburban arterials (including models for segments and intersections): completed under NCHRP Project 17-58.
- Intersection crash prediction methods for some intersection configurations and traffic control types not currently addressed in the HSM (e.g., all-way stop; rural 3-leg signalized; 3-leg stop-controlled where the major leg turns; urban 5-leg signalized; urban high-speed intersections): completed in 2021 under NCHRP Project 17-68.

However, in the absence of local calibration factors (see HSM-1 Part C, Appendix A for guidance on calibration of the predictive models), it is neither appropriate nor advisable to directly compare the results from new models (from NCHRP Projects 17-58, 17-68, and 17-70) to results from HSM-1 models, as the models were not calibrated to the same base state data sets, and consequently can produce unexpected results. If local calibration factors are available and applied to both new models and HSM-1 models, then it may be appropriate to directly compare the results.*[Note: Work being performed under NCHRP Project 17-72 (Update of Crash Modification Factors for the Highway Safety Manual) is expected to re-calibrate many of the old (HSM-1) and new (e.g., NCHRP 17-70) models to data from a single (or small number of) states, that would allow results from all models to be directly compared.]*

The models produced for NCHRP Project 17-70 have independent value in terms of informing the design of a roundabout and assessing the effects of different design characteristics on the expected safety performance of a roundabout.

The HSM-1 interim method previously included in IHSDM for evaluating roundabouts on urban/suburban arterials (i.e., evaluating an existing intersection and then applying a Crash Modification Factor for replacing the existing intersection with a roundabout) has been deactivated in IHSDM, to minimize any confusion with the new roundabout methodology.

Section Types

Section 1 Evaluation

Section: Section 1
Evaluation Start Location: 171+44.000
Evaluation End Location: 580+10.000
Area Type: Rural
Functional Class: Arterial
Type of Alignment: Undivided, Two Lane
Model Category: Rural, Two Lane
Calibration Factor: 2U=1.0; 3ST=1.0; 4ST=1.0;

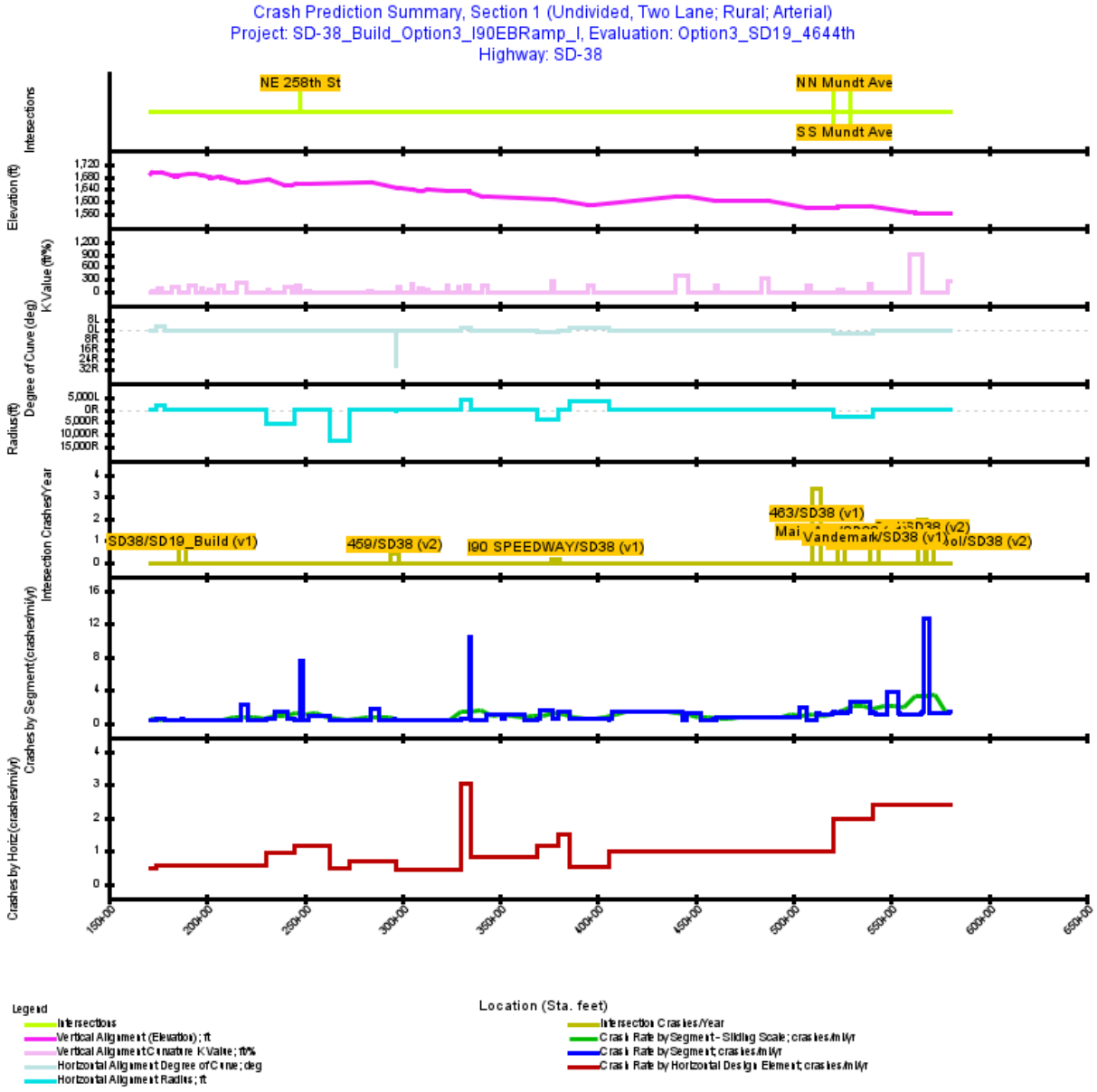

Figure 1. Crash Prediction Summary (Section 1)

Table 1. Observed Crashes Used in the Evaluation (Section 1)

Year	Observed Crashes	Total Crashes Used	FI Crashes	FI no/C Crashes	PDO Crashes
2018	9	9	2	1	7
2019	5	4	1	0	3
2020	9	9	5	1	4
2021	8	7	3	1	4
2022	6	6	3	1	3
All Years	37 [1]	35	14	4	21

Footnotes

[1] Note: Observed crash data that does not comply with the associated CPM model requirements may not be used in EB processing.

Table 2. Evaluation Highway - Homogeneous Segments (Section 1)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
1	Rural Two-Lane Segment Two-lane Undivided	171+44.000	172+42.000	98.00	0.0186	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	4.25	6.2	3	false	0	false	false	false				
2	Rural Two-Lane Segment Two-lane Undivided	172+42.000	174+52.690	210.69	0.0399	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.17	6.2	3	false	0	false	false	false				
3	Rural Two-Lane Segment Two-lane Undivided	174+52.690	176+25.000	172.31	0.0326	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.17	6.2	3	false	0	false	false	false	2,074.80	2.0	true	40
4	Rural Two-Lane Segment Two-lane Undivided	176+25.000	178+85.250	260.25	0.0493	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.88	6.2	3	false	0	false	false	false	2,074.80	2.0	true	40
5	Rural Two-Lane Segment Two-lane Undivided	178+85.250	183+75.370	490.12	0.0928	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.88	6.2	3	false	0	false	false	false				
6	Rural Two-Lane Segment Two-lane Undivided	183+75.370	184+00.000	24.63	0.0047	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
7	Rural Two-Lane Segment Two-lane Undivided	184+00.000	184+45.000	45.00	0.0085	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
8	Rural Two-Lane Segment Two-lane Undivided	184+45.000	185+20.000	75.00	0.0142	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
9	Rural Two-Lane Segment Two-lane Undivided	185+20.000	186+60.000	140.00	0.0265	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
10	Rural Two-Lane Segment Two-lane Undivided	186+60.000	187+20.000	60.00	0.0114	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
11	Rural Two-Lane Segment Two-lane Undivided	187+20.000	187+60.000	40.00	0.0076	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	0.00	1.13	6.2	3	false	0	false	false	false				
12	Rural Two-Lane Segment Two-lane Undivided	187+60.000	190+00.000	240.00	0.0455	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
13	Rural Two-Lane Segment Two-lane Undivided	190+00.000	192+00.000	200.00	0.0379	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
14	Rural Two-Lane Segment Two-lane Undivided	192+00.000	192+39.270	39.27	0.0074	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
15	Rural Two-Lane Segment Two-lane Undivided	192+39.270	193+60.000	120.73	0.0229	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.94	6.2	3	false	0	false	false	false				
16	Rural Two-Lane Segment Two-lane Undivided	193+60.000	197+65.000	405.00	0.0767	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.94	6.2	3	false	0	false	false	false				
17	Rural Two-Lane Segment Two-lane Undivided	197+65.000	199+00.000	135.00	0.0256	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.94	6.2	3	false	0	false	false	false				
18	Rural Two-Lane Segment Two-lane Undivided	199+00.000	201+63.750	263.75	0.0500	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.94	6.2	3	false	0	false	false	false				
19	Rural Two-Lane Segment Two-lane Undivided	201+63.750	202+00.000	36.25	0.0069	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.13	6.2	3	false	0	false	false	false				
20	Rural Two-Lane Segment Two-lane Undivided	202+00.000	207+00.000	500.00	0.0947	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.13	6.2	3	false	0	false	false	false				
21	Rural Two-Lane Segment Two-lane Undivided	207+00.000	207+49.760	49.76	0.0094	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.13	6.2	3	false	0	false	false	false				
22	Rural Two-Lane Segment Two-lane Undivided	207+49.760	217+74.250	1,024.49	0.1940	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.70	6.2	3	false	0	false	false	false				
23	Rural Two-Lane Segment Two-lane Undivided	217+74.250	221+00.000	325.75	0.0617	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false				
24	Rural Two-Lane Segment Two-lane Undivided	221+00.000	226+00.000	500.00	0.0947	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false				
25	Rural Two-Lane Segment Two-lane Undivided	226+00.000	230+66.250	466.25	0.0883	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false				
26	Rural Two-Lane Segment Two-lane Undivided	230+66.250	231+39.700	73.45	0.0139	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
27	Rural Two-Lane Segment Two-lane Undivided	231+39.700	235+00.000	360.30	0.0682	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-2.00	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
28	Rural Two-Lane Segment Two-lane Undivided	235+00.000	241+61.390	661.39	0.1253	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-2.00	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
29	Rural Two-Lane Segment Two-lane Undivided	241+61.390	242+00.000	38.61	0.0073	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.16	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
30	Rural Two-Lane Segment Two-lane Undivided	242+00.000	245+14.280	314.28	0.0595	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.16	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
31	Rural Two-Lane Segment Two-lane Undivided	245+14.280	246+55.100	140.82	0.0267	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.16	6.2	3	false	0	false	false	false				
32	Rural Two-Lane Segment Two-lane Undivided	246+55.100	248+00.000	144.90	0.0274	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.42	6.2	3	false	0	false	false	false				
33	Rural Two-Lane Segment Two-lane Undivided	248+00.000	249+00.000	100.00	0.0189	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	0.00	-0.42	6.2	3	false	0	false	false	false				
34	Rural Two-Lane Segment Two-lane Undivided	249+00.000	251+21.980	221.98	0.0420	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.42	6.2	3	false	0	false	false	false				
35	Rural Two-Lane Segment Two-lane Undivided	251+21.980	252+40.240	118.26	0.0224	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	3.43	6.2	3	false	0	false	false	false				
36	Rural Two-Lane Segment Two-lane Undivided	252+40.240	263+22.600	1,082.36	0.2050	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false				
37	Rural Two-Lane Segment Two-lane Undivided	263+22.600	272+66.740	944.14	0.1788	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false	12,237.00	2.0	true	70
38	Rural Two-Lane Segment Two-lane Undivided	272+66.740	280+00.000	733.26	0.1389	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false				
39	Rural Two-Lane Segment Two-lane Undivided	280+00.000	283+15.050	315.05	0.0597	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false				
40	Rural Two-Lane Segment Two-lane Undivided	283+15.050	284+08.540	93.49	0.0177	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	4.47	6.2	3	false	0	false	false	false				
41	Rural Two-Lane Segment Two-lane Undivided	284+08.540	288+50.000	441.46	0.0836	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
42	Rural Two-Lane Segment Two-lane Undivided	288+50.000	289+00.000	50.00	0.0095	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
43	Rural Two-Lane Segment Two-lane Undivided	289+00.000	295+90.000	690.00	0.1307	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
44	Rural Two-Lane Segment Two-lane Undivided	295+90.000	296+00.000	10.00	0.0019	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	0.00	-1.47	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
45	Rural Two-Lane Segment Two-lane Undivided	296+00.000	296+10.000	10.00	0.0019	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	0.00	-1.47	6.2	3	false	0	false	false	false				
46	Rural Two-Lane Segment Two-lane Undivided	296+10.000	296+96.520	86.52	0.0164	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
47	Rural Two-Lane Segment Two-lane Undivided	296+96.520	298+33.660	137.14	0.0260	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
48	Rural Two-Lane Segment Two-lane Undivided	298+33.660	303+50.000	516.34	0.0978	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.61	6.2	3	false	0	false	false	false				
49	Rural Two-Lane Segment Two-lane Undivided	303+50.000	304+50.000	100.00	0.0189	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.61	6.2	3	false	0	false	false	false				
50	Rural Two-Lane Segment Two-lane Undivided	304+50.000	305+02.039	52.04	0.0099	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.61	6.2	3	false	0	false	false	false				
51	Rural Two-Lane Segment Two-lane Undivided	305+02.039	309+35.490	433.45	0.0821	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.15	6.2	3	false	0	false	false	false				
52	Rural Two-Lane Segment Two-lane Undivided	309+35.490	311+70.000	234.51	0.0444	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.24	6.2	3	false	0	false	false	false				
53	Rural Two-Lane Segment Two-lane Undivided	311+70.000	313+25.000	155.00	0.0294	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	1.24	6.2	3	false	0	false	false	false				
54	Rural Two-Lane Segment Two-lane Undivided	313+25.000	323+00.000	975.00	0.1847	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.33	6.2	3	false	0	false	false	false				
55	Rural Two-Lane Segment Two-lane Undivided	323+00.000	323+26.980	26.98	0.0051	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.33	6.2	3	false	0	false	false	false				
56	Rural Two-Lane Segment Two-lane Undivided	323+26.980	328+89.230	562.25	0.1065	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.26	6.2	3	false	0	false	false	false				
57	Rural Two-Lane Segment Two-lane Undivided	328+89.230	329+81.740	92.51	0.0175	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.52	6.2	3	false	0	false	false	false				
58	Rural Two-Lane Segment Two-lane Undivided	329+81.740	333+24.920	343.18	0.0650	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.52	6.2	3	false	0	false	false	false	4,010.13	2.0	true	70
59	Rural Two-Lane Segment Two-lane Undivided	333+24.920	334+00.000	75.08	0.0142	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-2.17	6.2	3	false	0	false	false	false	4,010.13	2.0	true	70

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
60	Rural Two-Lane Segment Two-lane Undivided	334+00.000	335+39.960	139.96	0.0265	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-2.17	6.2	3	false	0	false	false	false	4,010.13	2.0	true	70
61	Rural Two-Lane Segment Two-lane Undivided	335+39.960	342+39.000	699.04	0.1324	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-2.17	6.2	3	false	0	false	false	false				
62	Rural Two-Lane Segment Two-lane Undivided	342+39.000	343+00.000	61.00	0.0116	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
63	Rural Two-Lane Segment Two-lane Undivided	343+00.000	351+20.000	820.00	0.1553	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
64	Rural Two-Lane Segment Two-lane Undivided	351+20.000	352+00.000	80.00	0.0152	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	0.00	-0.24	6.2	3	false	0	false	false	false				
65	Rural Two-Lane Segment Two-lane Undivided	352+00.000	352+20.000	20.00	0.0038	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	0.00	-0.24	6.2	3	false	0	false	false	false				
66	Rural Two-Lane Segment Two-lane Undivided	352+20.000	362+50.000	1,030.00	0.1951	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
67	Rural Two-Lane Segment Two-lane Undivided	362+50.000	369+14.990	664.99	0.1259	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
68	Rural Two-Lane Segment Two-lane Undivided	369+14.990	370+30.000	115.01	0.0218	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
69	Rural Two-Lane Segment Two-lane Undivided	370+30.000	370+60.000	30.00	0.0057	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
70	Rural Two-Lane Segment Two-lane Undivided	370+60.000	376+83.610	623.61	0.1181	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
71	Rural Two-Lane Segment Two-lane Undivided	376+83.610	378+00.000	116.39	0.0220	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
72	Rural Two-Lane Segment Two-lane Undivided	378+00.000	378+40.000	40.00	0.0076	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
73	Rural Two-Lane Segment Two-lane Undivided	378+40.000	378+60.000	20.00	0.0038	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
74	Rural Two-Lane Segment Two-lane Undivided	378+60.000	379+00.000	40.00	0.0076	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLTL Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
75	Rural Two-Lane Segment Two-lane Undivided	379+00.000	379+62.690	62.69	0.0119	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
76	Rural Two-Lane Segment Two-lane Undivided	379+62.690	385+22.970	560.28	0.1061	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false				
77	Rural Two-Lane Segment Two-lane Undivided	385+22.970	386+60.000	137.03	0.0260	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
78	Rural Two-Lane Segment Two-lane Undivided	386+60.000	389+50.000	290.00	0.0549	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
79	Rural Two-Lane Segment Two-lane Undivided	389+50.000	394+00.000	450.00	0.0852	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
80	Rural Two-Lane Segment Two-lane Undivided	394+00.000	396+46.150	246.15	0.0466	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
81	Rural Two-Lane Segment Two-lane Undivided	396+46.150	397+00.000	53.85	0.0102	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
82	Rural Two-Lane Segment Two-lane Undivided	397+00.000	399+00.000	200.00	0.0379	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	8.00	0.72	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
83	Rural Two-Lane Segment Two-lane Undivided	399+00.000	405+75.410	675.41	0.1279	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
84	Rural Two-Lane Segment Two-lane Undivided	405+75.410	406+00.000	24.59	0.0047	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false				
85	Rural Two-Lane Segment Two-lane Undivided	406+00.000	407+00.000	100.00	0.0189	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	0.00	8.00	0.72	6.2	3	false	0	false	false	false				
86	Rural Two-Lane Segment Two-lane Undivided	407+00.000	443+25.000	3,625.00	0.6866	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false				
87	Rural Two-Lane Segment Two-lane Undivided	443+25.000	445+50.000	225.00	0.0426	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
88	Rural Two-Lane Segment Two-lane Undivided	445+50.000	452+50.000	700.00	0.1326	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
89	Rural Two-Lane Segment Two-lane Undivided	452+50.000	459+00.000	650.00	0.1231	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
90	Rural Two-Lane Segment Two-lane Undivided	459+00.000	460+00.000	100.00	0.0189	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	0.00	-0.96	6.2	3	false	0	false	false	false				
91	Rural Two-Lane Segment Two-lane Undivided	460+00.000	460+58.580	58.58	0.0111	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
92	Rural Two-Lane Segment Two-lane Undivided	460+58.580	485+61.230	2,502.65	0.4740	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-0.01	6.2	3	false	0	false	false	false				
93	Rural Two-Lane Segment Two-lane Undivided	485+61.230	503+00.000	1,738.77	0.3293	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	false	false				
94	Rural Two-Lane Segment Two-lane Undivided	503+00.000	507+00.000	400.00	0.0758	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	false	false				
95	Rural Two-Lane Segment Two-lane Undivided	507+00.000	508+00.000	100.00	0.0189	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	true	false				
96	Rural Two-Lane Segment Two-lane Undivided	508+00.000	508+08.240	8.24	0.0016	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	true	false				
97	Rural Two-Lane Segment Two-lane Undivided	508+08.240	510+30.000	221.76	0.0420	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	false	true	false				
98	Rural Two-Lane Segment Two-lane Undivided	510+30.000	512+00.000	170.00	0.0322	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	false	false	false				
99	Rural Two-Lane Segment Two-lane Undivided	512+00.000	513+00.000	100.00	0.0189	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	0.21	6.2	3	false	0	false	true	false				
100	Rural Two-Lane Segment Two-lane Undivided	513+00.000	515+00.000	200.00	0.0379	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	false	true	false				
101	Rural Two-Lane Segment Two-lane Undivided	515+00.000	520+00.000	500.00	0.0947	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	true	true	false				
102	Rural Two-Lane Segment Two-lane Undivided	520+00.000	520+49.150	49.15	0.0093	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	0.21	6.2	3	false	0	false	true	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
103	Rural Two-Lane Segment Two-lane Undivided	520+49.150	521+00.000	50.85	0.0096	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	0.21	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
104	Rural Two-Lane Segment Two-lane Undivided	521+00.000	523+38.600	238.60	0.0452	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
105	Rural Two-Lane Segment Two-lane Undivided	523+38.600	524+00.000	61.40	0.0116	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	1.90	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
106	Rural Two-Lane Segment Two-lane Undivided	524+00.000	525+00.000	100.00	0.0189	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	1.90	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
107	Rural Two-Lane Segment Two-lane Undivided	525+00.000	525+18.580	18.58	0.0035	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	1.90	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
108	Rural Two-Lane Segment Two-lane Undivided	525+18.580	528+00.000	281.42	0.0533	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.02	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
109	Rural Two-Lane Segment Two-lane Undivided	528+00.000	529+00.000	100.00	0.0189	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.02	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
110	Rural Two-Lane Segment Two-lane Undivided	529+00.000	539+00.000	1,000.00	0.1894	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.02	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
111	Rural Two-Lane Segment Two-lane Undivided	539+00.000	539+50.000	50.00	0.0095	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.02	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
112	Rural Two-Lane Segment Two-lane Undivided	539+50.000	540+00.000	50.00	0.0095	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
113	Rural Two-Lane Segment Two-lane Undivided	540+00.000	540+50.000	50.00	0.0095	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
114	Rural Two-Lane Segment Two-lane Undivided	540+50.000	540+74.370	24.37	0.0046	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
115	Rural Two-Lane Segment Two-lane Undivided	540+74.370	541+00.000	25.63	0.0049	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
116	Rural Two-Lane Segment Two-lane Undivided	541+00.000	541+50.000	50.00	0.0095	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
117	Rural Two-Lane Segment Two-lane Undivided	541+50.000	541+70.000	20.00	0.0038	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
118	Rural Two-Lane Segment Two-lane Undivided	541+70.000	542+30.000	60.00	0.0114	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
119	Rural Two-Lane Segment Two-lane Undivided	542+30.000	542+64.000	34.00	0.0064	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false				
120	Rural Two-Lane Segment Two-lane Undivided	542+64.000	543+34.000	70.00	0.0133	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false				
121	Rural Two-Lane Segment Two-lane Undivided	543+34.000	544+00.000	66.00	0.0125	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false				
122	Rural Two-Lane Segment Two-lane Undivided	544+00.000	545+00.000	100.00	0.0189	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
123	Rural Two-Lane Segment Two-lane Undivided	545+00.000	548+23.000	323.00	0.0612	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
124	Rural Two-Lane Segment Two-lane Undivided	548+23.000	553+70.000	547.00	0.1036	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
125	Rural Two-Lane Segment Two-lane Undivided	553+70.000	554+00.000	30.00	0.0057	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	false	false				
126	Rural Two-Lane Segment Two-lane Undivided	554+00.000	554+20.000	20.00	0.0038	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
127	Rural Two-Lane Segment Two-lane Undivided	554+20.000	560+00.000	580.00	0.1098	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
128	Rural Two-Lane Segment Two-lane Undivided	560+00.000	562+58.560	258.56	0.0490	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
129	Rural Two-Lane Segment Two-lane Undivided	562+58.560	564+00.000	141.44	0.0268	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
130	Rural Two-Lane Segment Two-lane Undivided	564+00.000	565+00.000	100.00	0.0189	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
131	Rural Two-Lane Segment Two-lane Undivided	565+00.000	565+77.000	77.00	0.0146	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
132	Rural Two-Lane Segment Two-lane Undivided	565+77.000	566+10.000	33.00	0.0063	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				
133	Rural Two-Lane Segment Two-lane Undivided	566+10.000	566+50.000	40.00	0.0076	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				
134	Rural Two-Lane Segment Two-lane Undivided	566+50.000	569+37.000	287.00	0.0544	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
135	Rural Two-Lane Segment Two-lane Undivided	569+37.000	569+70.000	33.00	0.0063	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	0.00	-0.20	6.2	3	false	0	false	false	false				
136	Rural Two-Lane Segment Two-lane Undivided	569+70.000	570+00.000	30.00	0.0057	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
137	Rural Two-Lane Segment Two-lane Undivided	570+00.000	575+00.000	500.00	0.0947	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	true	false	false				
138	Rural Two-Lane Segment Two-lane Undivided	575+00.000	579+50.000	450.00	0.0852	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
139	Rural Two-Lane Segment Two-lane Undivided	579+50.000	579+70.000	20.00	0.0038	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				
140	Rural Two-Lane Segment Two-lane Undivided	579+70.000	580+10.000	40.00	0.0076	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				

Table 3. Crash History Highway - Homogeneous Segments (Section 1)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
1	Rural Two-Lane Segment Two-lane Undivided	171+44.000	172+42.000	98.00	0.0186	2018-2022: 2,085	12.00	12.00	8.00	8.00	4.25	6.2	3	false	0	false	false	false				
2	Rural Two-Lane Segment Two-lane Undivided	172+42.000	174+52.690	210.69	0.0399	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.17	6.2	3	false	0	false	false	false				
3	Rural Two-Lane Segment Two-lane Undivided	174+52.690	176+25.000	172.31	0.0326	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.17	6.2	3	false	0	false	false	false	2,074.80	2.0	true	40
4	Rural Two-Lane Segment Two-lane Undivided	176+25.000	178+85.250	260.25	0.0493	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.88	6.2	3	false	0	false	false	false	2,074.80	2.0	true	40
5	Rural Two-Lane Segment Two-lane Undivided	178+85.250	183+75.370	490.12	0.0928	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.88	6.2	3	false	0	false	false	false				
6	Rural Two-Lane Segment Two-lane Undivided	183+75.370	184+00.000	24.63	0.0047	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
7	Rural Two-Lane Segment Two-lane Undivided	184+00.000	184+45.000	45.00	0.0085	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
8	Rural Two-Lane Segment Two-lane Undivided	184+45.000	185+20.000	75.00	0.0142	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
9	Rural Two-Lane Segment Two-lane Undivided	185+20.000	186+60.000	140.00	0.0265	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
10	Rural Two-Lane Segment Two-lane Undivided	186+60.000	187+20.000	60.00	0.0114	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
11	Rural Two-Lane Segment Two-lane Undivided	187+20.000	187+60.000	40.00	0.0076	2018-2022: 2,085	12.00	12.00	0.00	0.00	1.13	6.2	3	false	0	false	false	false				
12	Rural Two-Lane Segment Two-lane Undivided	187+60.000	190+00.000	240.00	0.0455	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
13	Rural Two-Lane Segment Two-lane Undivided	190+00.000	192+00.000	200.00	0.0379	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
14	Rural Two-Lane Segment Two-lane Undivided	192+00.000	192+39.270	39.27	0.0074	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.13	6.2	3	false	0	false	false	false				
15	Rural Two-Lane Segment Two-lane Undivided	192+39.270	193+60.000	120.73	0.0229	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.94	6.2	3	false	0	false	false	false				
16	Rural Two-Lane Segment Two-lane Undivided	193+60.000	197+65.000	405.00	0.0767	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.94	6.2	3	false	0	false	false	false				
17	Rural Two-Lane Segment Two-lane Undivided	197+65.000	199+00.000	135.00	0.0256	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.94	6.2	3	false	0	false	false	false				
18	Rural Two-Lane Segment Two-lane Undivided	199+00.000	201+63.750	263.75	0.0500	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.94	6.2	3	false	0	false	false	false				
19	Rural Two-Lane Segment Two-lane Undivided	201+63.750	202+00.000	36.25	0.0069	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.13	6.2	3	false	0	false	false	false				
20	Rural Two-Lane Segment Two-lane Undivided	202+00.000	207+00.000	500.00	0.0947	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.13	6.2	3	false	0	false	false	false				
21	Rural Two-Lane Segment Two-lane Undivided	207+00.000	207+49.760	49.76	0.0094	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.13	6.2	3	false	0	false	false	false				
22	Rural Two-Lane Segment Two-lane Undivided	207+49.760	217+74.250	1,024.49	0.1940	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.70	6.2	3	false	0	false	false	false				
23	Rural Two-Lane Segment Two-lane Undivided	217+74.250	221+00.000	325.75	0.0617	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false				
24	Rural Two-Lane Segment Two-lane Undivided	221+00.000	226+00.000	500.00	0.0947	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false				
25	Rural Two-Lane Segment Two-lane Undivided	226+00.000	230+66.250	466.25	0.0883	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
26	Rural Two-Lane Segment Two-lane Undivided	230+66.250	231+39.700	73.45	0.0139	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.77	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
27	Rural Two-Lane Segment Two-lane Undivided	231+39.700	235+00.000	360.30	0.0682	2018-2022: 2,085	12.00	12.00	8.00	8.00	-2.00	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
28	Rural Two-Lane Segment Two-lane Undivided	235+00.000	241+61.390	661.39	0.1253	2018-2022: 2,085	12.00	12.00	8.00	8.00	-2.00	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
29	Rural Two-Lane Segment Two-lane Undivided	241+61.390	242+00.000	38.61	0.0073	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.16	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
30	Rural Two-Lane Segment Two-lane Undivided	242+00.000	245+14.280	314.28	0.0595	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.16	6.2	3	false	0	false	false	false	5,644.64	2.0	true	70
31	Rural Two-Lane Segment Two-lane Undivided	245+14.280	246+55.100	140.82	0.0267	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.16	6.2	3	false	0	false	false	false				
32	Rural Two-Lane Segment Two-lane Undivided	246+55.100	248+00.000	144.90	0.0274	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.42	6.2	3	false	0	false	false	false				
33	Rural Two-Lane Segment Two-lane Undivided	248+00.000	249+00.000	100.00	0.0189	2018-2022: 2,085	12.00	12.00	0.00	0.00	-0.42	6.2	3	false	0	false	false	false				
34	Rural Two-Lane Segment Two-lane Undivided	249+00.000	251+21.980	221.98	0.0420	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.42	6.2	3	false	0	false	false	false				
35	Rural Two-Lane Segment Two-lane Undivided	251+21.980	252+40.240	118.26	0.0224	2018-2022: 2,085	12.00	12.00	8.00	8.00	3.43	6.2	3	false	0	false	false	false				
36	Rural Two-Lane Segment Two-lane Undivided	252+40.240	263+22.600	1,082.36	0.2050	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false				
37	Rural Two-Lane Segment Two-lane Undivided	263+22.600	272+66.740	944.14	0.1788	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false	12,237.00	2.0	true	70
38	Rural Two-Lane Segment Two-lane Undivided	272+66.740	280+00.000	733.26	0.1389	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false				
39	Rural Two-Lane Segment Two-lane Undivided	280+00.000	283+15.050	315.05	0.0597	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.02	6.2	3	false	0	false	false	false				
40	Rural Two-Lane Segment Two-lane Undivided	283+15.050	284+08.540	93.49	0.0177	2018-2022: 2,085	12.00	12.00	8.00	8.00	4.47	6.2	3	false	0	false	false	false				
41	Rural Two-Lane Segment Two-lane Undivided	284+08.540	288+50.000	441.46	0.0836	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
42	Rural Two-Lane Segment Two-lane Undivided	288+50.000	289+00.000	50.00	0.0095	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
43	Rural Two-Lane Segment Two-lane Undivided	289+00.000	295+90.000	690.00	0.1307	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
44	Rural Two-Lane Segment Two-lane Undivided	295+90.000	296+00.000	10.00	0.0019	2018-2022: 2,085	12.00	12.00	0.00	0.00	-1.47	6.2	3	false	0	false	false	false				
45	Rural Two-Lane Segment Two-lane Undivided	296+00.000	296+10.000	10.00	0.0019	2018-2022: 2,085	12.00	12.00	0.00	0.00	-1.47	6.2	3	false	0	false	false	false				
46	Rural Two-Lane Segment Two-lane Undivided	296+10.000	296+96.520	86.52	0.0164	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
47	Rural Two-Lane Segment Two-lane Undivided	296+96.520	298+33.660	137.14	0.0260	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.47	6.2	3	false	0	false	false	false				
48	Rural Two-Lane Segment Two-lane Undivided	298+33.660	303+50.000	516.34	0.0978	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.61	6.2	3	false	0	false	false	false				
49	Rural Two-Lane Segment Two-lane Undivided	303+50.000	304+50.000	100.00	0.0189	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.61	6.2	3	false	0	false	false	false				
50	Rural Two-Lane Segment Two-lane Undivided	304+50.000	305+02.039	52.04	0.0099	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.61	6.2	3	false	0	false	false	false				
51	Rural Two-Lane Segment Two-lane Undivided	305+02.039	309+35.490	433.45	0.0821	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.15	6.2	3	false	0	false	false	false				
52	Rural Two-Lane Segment Two-lane Undivided	309+35.490	311+70.000	234.51	0.0444	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.24	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
53	Rural Two-Lane Segment Two-lane Undivided	311+70.000	313+25.000	155.00	0.0294	2018-2022: 2,085	12.00	12.00	8.00	8.00	1.24	6.2	3	false	0	false	false	false				
54	Rural Two-Lane Segment Two-lane Undivided	313+25.000	323+00.000	975.00	0.1847	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.33	6.2	3	false	0	false	false	false				
55	Rural Two-Lane Segment Two-lane Undivided	323+00.000	323+26.980	26.98	0.0051	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.33	6.2	3	false	0	false	false	false				
56	Rural Two-Lane Segment Two-lane Undivided	323+26.980	328+89.230	562.25	0.1065	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.26	6.2	3	false	0	false	false	false				
57	Rural Two-Lane Segment Two-lane Undivided	328+89.230	329+81.740	92.51	0.0175	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.52	6.2	3	false	0	false	false	false				
58	Rural Two-Lane Segment Two-lane Undivided	329+81.740	333+24.920	343.18	0.0650	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.52	6.2	3	false	0	false	false	false	4,010.13	2.0	true	70
59	Rural Two-Lane Segment Two-lane Undivided	333+24.920	334+00.000	75.08	0.0142	2018-2022: 2,085	12.00	12.00	8.00	8.00	-2.17	6.2	3	false	0	false	false	false	4,010.13	2.0	true	70
60	Rural Two-Lane Segment Two-lane Undivided	334+00.000	335+39.960	139.96	0.0265	2018-2022: 2,085	12.00	12.00	8.00	8.00	-2.17	6.2	3	false	0	false	false	false	4,010.13	2.0	true	70
61	Rural Two-Lane Segment Two-lane Undivided	335+39.960	342+39.000	699.04	0.1324	2018-2022: 2,085	12.00	12.00	8.00	8.00	-2.17	6.2	3	false	0	false	false	false				
62	Rural Two-Lane Segment Two-lane Undivided	342+39.000	343+00.000	61.00	0.0116	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
63	Rural Two-Lane Segment Two-lane Undivided	343+00.000	351+20.000	820.00	0.1553	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
64	Rural Two-Lane Segment Two-lane Undivided	351+20.000	352+00.000	80.00	0.0152	2018-2022: 2,085	12.00	12.00	0.00	0.00	-0.24	6.2	3	false	0	false	false	false				
65	Rural Two-Lane Segment Two-lane Undivided	352+00.000	352+20.000	20.00	0.0038	2018-2022: 2,085	12.00	12.00	0.00	0.00	-0.24	6.2	3	false	0	false	false	false				
66	Rural Two-Lane Segment Two-lane Undivided	352+20.000	362+50.000	1,030.00	0.1951	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
67	Rural Two-Lane Segment Two-lane Undivided	362+50.000	369+14.990	664.99	0.1259	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false				
68	Rural Two-Lane Segment Two-lane Undivided	369+14.990	370+30.000	115.01	0.0218	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
69	Rural Two-Lane Segment Two-lane Undivided	370+30.000	370+60.000	30.00	0.0057	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
70	Rural Two-Lane Segment Two-lane Undivided	370+60.000	376+83.610	623.61	0.1181	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.24	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
71	Rural Two-Lane Segment Two-lane Undivided	376+83.610	378+00.000	116.39	0.0220	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
72	Rural Two-Lane Segment Two-lane Undivided	378+00.000	378+40.000	40.00	0.0076	2018-2022: 2,085	12.00	12.00	0.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
73	Rural Two-Lane Segment Two-lane Undivided	378+40.000	378+60.000	20.00	0.0038	2018-2022: 2,085	12.00	12.00	0.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
74	Rural Two-Lane Segment Two-lane Undivided	378+60.000	379+00.000	40.00	0.0076	2018-2022: 2,085	12.00	12.00	0.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
75	Rural Two-Lane Segment Two-lane Undivided	379+00.000	379+62.690	62.69	0.0119	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	4,023.18	2.0	true	70
76	Rural Two-Lane Segment Two-lane Undivided	379+62.690	385+22.970	560.28	0.1061	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false				
77	Rural Two-Lane Segment Two-lane Undivided	385+22.970	386+60.000	137.03	0.0260	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
78	Rural Two-Lane Segment Two-lane Undivided	386+60.000	389+50.000	290.00	0.0549	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
79	Rural Two-Lane Segment Two-lane Undivided	389+50.000	394+00.000	450.00	0.0852	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
80	Rural Two-Lane Segment Two-lane Undivided	394+00.000	396+46.150	246.15	0.0466	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.04	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
81	Rural Two-Lane Segment Two-lane Undivided	396+46.150	397+00.000	53.85	0.0102	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
82	Rural Two-Lane Segment Two-lane Undivided	397+00.000	399+00.000	200.00	0.0379	2018-2022: 2,085	12.00	12.00	0.00	8.00	0.72	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
83	Rural Two-Lane Segment Two-lane Undivided	399+00.000	405+75.410	675.41	0.1279	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false	3,856.89	2.0	true	70
84	Rural Two-Lane Segment Two-lane Undivided	405+75.410	406+00.000	24.59	0.0047	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false				
85	Rural Two-Lane Segment Two-lane Undivided	406+00.000	407+00.000	100.00	0.0189	2018-2022: 2,085	12.00	12.00	0.00	8.00	0.72	6.2	3	false	0	false	false	false				
86	Rural Two-Lane Segment Two-lane Undivided	407+00.000	443+25.000	3,625.00	0.6866	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.72	6.2	3	false	0	false	false	false				
87	Rural Two-Lane Segment Two-lane Undivided	443+25.000	445+50.000	225.00	0.0426	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
88	Rural Two-Lane Segment Two-lane Undivided	445+50.000	452+50.000	700.00	0.1326	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
89	Rural Two-Lane Segment Two-lane Undivided	452+50.000	459+00.000	650.00	0.1231	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
90	Rural Two-Lane Segment Two-lane Undivided	459+00.000	460+00.000	100.00	0.0189	2018-2022: 2,085	12.00	12.00	8.00	0.00	-0.96	6.2	3	false	0	false	false	false				
91	Rural Two-Lane Segment Two-lane Undivided	460+00.000	460+58.580	58.58	0.0111	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
92	Rural Two-Lane Segment Two-lane Undivided	460+58.580	485+61.230	2,502.65	0.4740	2018-2022: 2,085	12.00	12.00	8.00	8.00	-0.01	6.2	3	false	0	false	false	false				
93	Rural Two-Lane Segment Two-lane Undivided	485+61.230	503+00.000	1,738.77	0.3293	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	false	false				
94	Rural Two-Lane Segment Two-lane Undivided	503+00.000	507+00.000	400.00	0.0758	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	false	false				
95	Rural Two-Lane Segment Two-lane Undivided	507+00.000	508+00.000	100.00	0.0189	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	true	false				
96	Rural Two-Lane Segment Two-lane Undivided	508+00.000	508+08.240	8.24	0.0016	2018-2022: 2,085	12.00	12.00	8.00	8.00	-1.07	6.2	3	false	0	false	true	false				
97	Rural Two-Lane Segment Two-lane Undivided	508+08.240	510+30.000	221.76	0.0420	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	false	true	false				
98	Rural Two-Lane Segment Two-lane Undivided	510+30.000	512+00.000	170.00	0.0322	2018-2022: 2,085	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	false	false	false				
99	Rural Two-Lane Segment Two-lane Undivided	512+00.000	513+00.000	100.00	0.0189	2018-2022: 4,325	12.00	12.00	0.00	0.00	0.21	6.2	3	false	0	false	true	false				
100	Rural Two-Lane Segment Two-lane Undivided	513+00.000	515+00.000	200.00	0.0379	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	false	true	false				
101	Rural Two-Lane Segment Two-lane Undivided	515+00.000	520+00.000	500.00	0.0947	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	true	true	false				
102	Rural Two-Lane Segment Two-lane Undivided	520+00.000	520+49.150	49.15	0.0093	2018-2022: 4,325	12.00	12.00	0.00	0.00	0.21	6.2	3	false	0	false	true	false				
103	Rural Two-Lane Segment Two-lane Undivided	520+49.150	521+00.000	50.85	0.0096	2018-2022: 4,325	12.00	12.00	0.00	0.00	0.21	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
104	Rural Two-Lane Segment Two-lane Undivided	521+00.000	523+38.600	238.60	0.0452	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.21	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
105	Rural Two-Lane Segment Two-lane Undivided	523+38.600	524+00.000	61.40	0.0116	2018-2022: 4,325	12.00	12.00	8.00	8.00	1.90	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
106	Rural Two-Lane Segment Two-lane Undivided	524+00.000	525+00.000	100.00	0.0189	2018-2022: 4,325	12.00	12.00	0.00	0.00	1.90	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
107	Rural Two-Lane Segment Two-lane Undivided	525+00.000	525+18.580	18.58	0.0035	2018-2022: 4,325	12.00	12.00	8.00	8.00	1.90	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
108	Rural Two-Lane Segment Two-lane Undivided	525+18.580	528+00.000	281.42	0.0533	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.02	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
109	Rural Two-Lane Segment Two-lane Undivided	528+00.000	529+00.000	100.00	0.0189	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.02	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
110	Rural Two-Lane Segment Two-lane Undivided	529+00.000	539+00.000	1,000.00	0.1894	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.02	6.2	3	false	0	true	true	false	2,458.49	2.0	true	45
111	Rural Two-Lane Segment Two-lane Undivided	539+00.000	539+50.000	50.00	0.0095	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.02	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
112	Rural Two-Lane Segment Two-lane Undivided	539+50.000	540+00.000	50.00	0.0095	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
113	Rural Two-Lane Segment Two-lane Undivided	540+00.000	540+50.000	50.00	0.0095	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
114	Rural Two-Lane Segment Two-lane Undivided	540+50.000	540+74.370	24.37	0.0046	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false	2,458.49	2.0	true	45
115	Rural Two-Lane Segment Two-lane Undivided	540+74.370	541+00.000	25.63	0.0049	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
116	Rural Two-Lane Segment Two-lane Undivided	541+00.000	541+50.000	50.00	0.0095	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
117	Rural Two-Lane Segment Two-lane Undivided	541+50.000	541+70.000	20.00	0.0038	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
118	Rural Two-Lane Segment Two-lane Undivided	541+70.000	542+30.000	60.00	0.0114	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	true	false				
119	Rural Two-Lane Segment Two-lane Undivided	542+30.000	542+64.000	34.00	0.0064	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false				
120	Rural Two-Lane Segment Two-lane Undivided	542+64.000	543+34.000	70.00	0.0133	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false				
121	Rural Two-Lane Segment Two-lane Undivided	543+34.000	544+00.000	66.00	0.0125	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	true	false				
122	Rural Two-Lane Segment Two-lane Undivided	544+00.000	545+00.000	100.00	0.0189	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
123	Rural Two-Lane Segment Two-lane Undivided	545+00.000	548+23.000	323.00	0.0612	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
124	Rural Two-Lane Segment Two-lane Undivided	548+23.000	553+70.000	547.00	0.1036	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
125	Rural Two-Lane Segment Two-lane Undivided	553+70.000	554+00.000	30.00	0.0057	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	false	false				
126	Rural Two-Lane Segment Two-lane Undivided	554+00.000	554+20.000	20.00	0.0038	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.96	6.2	3	false	0	false	false	false				
127	Rural Two-Lane Segment Two-lane Undivided	554+20.000	560+00.000	580.00	0.1098	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
128	Rural Two-Lane Segment Two-lane Undivided	560+00.000	562+58.560	258.56	0.0490	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.96	6.2	3	false	0	false	false	false				
129	Rural Two-Lane Segment Two-lane Undivided	562+58.560	564+00.000	141.44	0.0268	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
130	Rural Two-Lane Segment Two-lane Undivided	564+00.000	565+00.000	100.00	0.0189	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
131	Rural Two-Lane Segment Two-lane Undivided	565+00.000	565+77.000	77.00	0.0146	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
132	Rural Two-Lane Segment Two-lane Undivided	565+77.000	566+10.000	33.00	0.0063	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				
133	Rural Two-Lane Segment Two-lane Undivided	566+10.000	566+50.000	40.00	0.0076	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Grade (%)	Driveway Density (driveways/mi)	Hazard Rating	Centerline Rumble Strip	Passing Lanes	TWLT Lane	Lighting	Automated Speed Enforcement	Radius (ft)	Superelevation (%)	Adverse	Design Speed (mph)
134	Rural Two-Lane Segment Two-lane Undivided	566+50.000	569+37.000	287.00	0.0544	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
135	Rural Two-Lane Segment Two-lane Undivided	569+37.000	569+70.000	33.00	0.0063	2018-2022: 4,325	12.00	12.00	8.00	0.00	-0.20	6.2	3	false	0	false	false	false				
136	Rural Two-Lane Segment Two-lane Undivided	569+70.000	570+00.000	30.00	0.0057	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
137	Rural Two-Lane Segment Two-lane Undivided	570+00.000	575+00.000	500.00	0.0947	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	true	false	false				
138	Rural Two-Lane Segment Two-lane Undivided	575+00.000	579+50.000	450.00	0.0852	2018-2022: 4,325	12.00	12.00	8.00	8.00	-0.20	6.2	3	false	0	false	false	false				
139	Rural Two-Lane Segment Two-lane Undivided	579+50.000	579+70.000	20.00	0.0038	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				
140	Rural Two-Lane Segment Two-lane Undivided	579+70.000	580+10.000	40.00	0.0076	2018-2022: 4,325	12.00	12.00	0.00	0.00	-0.20	6.2	3	false	0	false	false	false				

Table 4. Evaluation Intersection - Section 1

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
1	West Central School/SD38 (v2)	Rural Two-Lane Intersection Three-Legged w/STOP control	569+50.000	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	2025: 912; 2026: 932; 2027: 951; 2028: 970; 2029: 990; 2030: 1,013; 2031: 1,036; 2032: 1,059; 2033: 1,082; 2034: 1,105; 2035: 1,129; 2036: 1,152; 2037: 1,175; 2038: 1,198; 2039: 1,221; 2040: 1,245; 2041: 1,273; 2042: 1,302; 2043: 1,330; 2044: 1,359; 2045: 1,387; 2046: 1,416; 2047: 1,444; 2048: 1,473; 2049: 1,501; 2050: 1,530	3	Stop-Controlled	0	0	1.37		false
2	2nd/SD38 (v2)	Rural Two-Lane Intersection Four-Legged w/STOP control	566+00.000	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	2025: 1,338; 2026: 1,366; 2027: 1,394; 2028: 1,422; 2029: 1,450; 2030: 1,484; 2031: 1,518; 2032: 1,552; 2033: 1,586; 2034: 1,620; 2035: 1,654; 2036: 1,688; 2037: 1,722; 2038: 1,756; 2039: 1,790; 2040: 1,825; 2041: 1,867; 2042: 1,909; 2043: 1,951; 2044: 1,993; 2045: 2,035; 2046: 2,077; 2047: 2,119; 2048: 2,161; 2049: 2,203; 2050: 2,245	4	Stop-Controlled	1	0	41.37	41.37	false
4	459/SD38 (v2)	Rural Two-Lane Intersection Four-Legged w/STOP control	296+00.000	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	2025: 320; 2026: 329; 2027: 337; 2028: 346; 2029: 355; 2030: 363; 2031: 371; 2032: 379; 2033: 387; 2034: 395; 2035: 404; 2036: 412; 2037: 420; 2038: 428; 2039: 436; 2040: 445; 2041: 455; 2042: 465; 2043: 475; 2044: 485; 2045: 495; 2046: 505; 2047: 515; 2048: 525; 2049: 535; 2050: 545	4	Stop-Controlled	2	0	0.04	0.04	false
5	SD38/SD19_Build (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	187+50.000	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	2025: 2,094; 2026: 2,140; 2027: 2,187; 2028: 2,233; 2029: 2,280; 2030: 2,336; 2031: 2,392; 2032: 2,449; 2033: 2,505; 2034: 2,561; 2035: 2,618; 2036: 2,674; 2037: 2,730; 2038: 2,787; 2039: 2,843; 2040: 2,900; 2041: 2,967; 2042: 3,034; 2043: 3,101; 2044: 3,168; 2045: 3,235; 2046: 3,302; 2047: 3,369; 2048: 3,436; 2049: 3,503; 2050: 3,570	4	Stop-Controlled	2	0	5.84	5.84	false
6	I90 SPEEDWAY/SD38 (v1)	Rural Two-Lane Intersection Three-Legged w/STOP control	378+50.000	2025: 2,232; 2026: 2,282; 2027: 2,331; 2028: 2,380; 2029: 2,430; 2030: 2,490; 2031: 2,550; 2032: 2,610; 2033: 2,670; 2034: 2,730; 2035: 2,790; 2036: 2,850; 2037: 2,910; 2038: 2,970; 2039: 3,030; 2040: 3,090; 2041: 3,162; 2042: 3,234; 2043: 3,306; 2044: 3,378; 2045: 3,450; 2046: 3,522; 2047: 3,594; 2048: 3,666; 2049: 3,738; 2050: 3,810	2025: 260; 2026: 264; 2027: 267; 2028: 271; 2029: 275; 2030: 281; 2031: 288; 2032: 295; 2033: 302; 2034: 309; 2035: 315; 2036: 322; 2037: 329; 2038: 336; 2039: 343; 2040: 350; 2041: 372; 2042: 395; 2043: 417; 2044: 440; 2045: 462; 2046: 485; 2047: 507; 2048: 530; 2049: 552; 2050: 575	3	Stop-Controlled	1	1	5.46		false
7	463/SD38 (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	512+00.000	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	2025: 3,802; 2026: 3,882; 2027: 3,963; 2028: 4,044; 2029: 4,125; 2030: 4,221; 2031: 4,318; 2032: 4,415; 2033: 4,512; 2034: 4,609; 2035: 4,705; 2036: 4,802; 2037: 4,899; 2038: 4,996; 2039: 5,093; 2040: 5,190; 2041: 5,308; 2042: 5,427; 2043: 5,545; 2044: 5,664; 2045: 5,782; 2046: 5,901; 2047: 6,019; 2048: 6,138; 2049: 6,256; 2050: 6,375	4	Stop-Controlled	1	0	1.43	1.43	false
8	Main Ave/SD38 (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	524+50.000	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	2025: 1,367; 2026: 1,397; 2027: 1,426; 2028: 1,455; 2029: 1,485; 2030: 1,520; 2031: 1,555; 2032: 1,590; 2033: 1,625; 2034: 1,660; 2035: 1,695; 2036: 1,730; 2037: 1,765; 2038: 1,800; 2039: 1,835; 2040: 1,870; 2041: 1,912; 2042: 1,955; 2043: 1,997; 2044: 2,040; 2045: 2,082; 2046: 2,125; 2047: 2,167; 2048: 2,210; 2049: 2,252; 2050: 2,295	4	Stop-Controlled	0	0	11.00	10.54	false
9	Vandemark/SD38 (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	541+50.000	2025: 6,594; 2026: 7,350; 2027: 8,107; 2028: 8,863; 2029: 9,620; 2030: 9,751; 2031: 9,883; 2032: 10,015; 2033: 10,147; 2034: 10,279; 2035: 10,410; 2036: 10,542; 2037: 10,674; 2038: 10,806; 2039: 10,938; 2040: 11,070; 2041: 11,221; 2042: 11,372; 2043: 11,523; 2044: 11,674; 2045: 11,825; 2046: 11,976; 2047: 12,127; 2048: 12,278; 2049: 12,429; 2050: 12,580	2025: 657; 2026: 672; 2027: 686; 2028: 700; 2029: 715; 2030: 731; 2031: 747; 2032: 764; 2033: 780; 2034: 796; 2035: 813; 2036: 829; 2037: 845; 2038: 862; 2039: 878; 2040: 895; 2041: 915; 2042: 936; 2043: 956; 2044: 977; 2045: 997; 2046: 1,018; 2047: 1,038; 2048: 1,059; 2049: 1,079; 2050: 1,100	4	Stop-Controlled	1	0	48.63	48.63	false

Table 5. Crash History Intersection - Section 1

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
1	West Central School/SD38 (v2)	Rural Two-Lane Intersection Three-Legged w/STOP control	569+50.000	2018-2022: 4,325	2018-2022: 855	3	Stop-Controlled	0	0	1.37		false
2	2nd/SD38 (v2)	Rural Two-Lane Intersection Four-Legged w/STOP control	566+00.000	2018-2022: 4,325	2018-2022: 1,255	4	Stop-Controlled	1	0	41.37	41.37	false
4	459/SD38 (v2)	Rural Two-Lane Intersection Four-Legged w/STOP control	296+00.000	2018-2022: 2,085	2018-2022: 295	4	Stop-Controlled	2	0	0.04	0.04	false
5	SD38/SD19_Build (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	187+50.000	2018-2022: 2,085	2018-2022: 1,955	4	Stop-Controlled	2	0	5.84	5.84	false
6	I90 SPEEDWAY/SD38 (v1)	Rural Two-Lane Intersection Three-Legged w/STOP control	378+50.000	2018-2022: 2,085	2018-2022: 250	3	Stop-Controlled	1	1	5.46		false
7	463/SD38 (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	512+00.000	2018-2022: 4,325	2018-2022: 3,560	4	Stop-Controlled	1	0	1.43	1.43	false
8	Main Ave/SD38 (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	524+50.000	2018-2022: 4,325	2018-2022: 1,280	4	Stop-Controlled	0	0	11.00	10.54	false
9	Vandemark/SD38 (v1)	Rural Two-Lane Intersection Four-Legged w/STOP control	541+50.000	2018-2022: 4,325	2018-2022: 615	4	Stop-Controlled	1	0	48.63	48.63	false

Table 6. Expected Highway Crash Rates and Frequencies Summary (Section 1)

First Year of Analysis	**2025**
Last Year of Analysis	**2050**
Evaluated Length (mi)	**7.7398**
Average Future Road AADT (vpd)	**4,284**
Expected Crashes	
Total Crashes	**476.74**
Fatal and Injury Crashes	**193.60**
Property-Damage-Only Crashes	**283.14**
Percent of Total Expected Crashes	
Percent Fatal and Injury Crashes (%)	**41**
Percent Property-Damage-Only Crashes (%)	**59**
Expected Crash Rate	
Crash Rate (crashes/mi/yr)	**2.3691**
FI Crash Rate (crashes/mi/yr)	**0.9621**
PDO Crash Rate (crashes/mi/yr)	**1.4070**
Expected Travel Crash Rate	
Total Travel (million veh-mi)	**314.63**
Travel Crash Rate (crashes/million veh-mi)	**1.51**
Travel FI Crash Rate (crashes/million veh-mi)	**0.61**
Travel PDO Crash Rate (crashes/million veh-mi)	**0.90**

Table 7. Expected Crash Frequencies and Rates by Highway Segment/Intersection (Section 1)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
1	171+44.000	172+42.000	0.0186	0.237	0.402	0.0091	0.0033	0.0058	0.0155	0.0050	0.0105	-0.0063	-0.0017	-0.0047	0.4920	0.45	
2	172+42.000	174+52.690	0.0399	0.482	0.786	0.0185	0.0067	0.0119	0.0302	0.0097	0.0205	-0.0117	-0.0030	-0.0087	0.4646	0.43	
3	174+52.690	176+25.000	0.0326	0.499	0.980	0.0192	0.0072	0.0120	0.0377	0.0121	0.0256	-0.0185	-0.0049	-0.0136	0.5886	0.54	
4	176+25.000	178+85.250	0.0493	0.754	1.479	0.0290	0.0108	0.0182	0.0569	0.0183	0.0386	-0.0279	-0.0074	-0.0205	0.5886	0.54	
5	178+85.250	183+75.370	0.0928	1.121	1.829	0.0431	0.0155	0.0276	0.0703	0.0226	0.0478	-0.0272	-0.0071	-0.0201	0.4646	0.43	
6	183+75.370	184+00.000	0.0047	0.056	0.092	0.0022	0.0008	0.0014	0.0035	0.0011	0.0024	-0.0014	-0.0004	-0.0010	0.4646	0.43	
7	184+00.000	184+45.000	0.0085	0.103	0.168	0.0040	0.0014	0.0025	0.0065	0.0021	0.0044	-0.0025	-0.0006	-0.0018	0.4646	0.43	
8	184+45.000	185+20.000	0.0142	0.172	0.280	0.0066	0.0024	0.0042	0.0108	0.0035	0.0073	-0.0042	-0.0011	-0.0031	0.4646	0.43	
9	185+20.000	186+60.000	0.0265	0.320	0.522	0.0123	0.0044	0.0079	0.0201	0.0064	0.0136	-0.0078	-0.0020	-0.0058	0.4646	0.43	
10	186+60.000	187+20.000	0.0114	0.137	0.224	0.0053	0.0019	0.0034	0.0086	0.0028	0.0058	-0.0033	-0.0009	-0.0025	0.4646	0.43	
11	187+20.000	187+60.000	0.0076	0.111	0.208	0.0043	0.0016	0.0027	0.0080	0.0026	0.0054	-0.0037	-0.0010	-0.0027	0.5613	0.52	
SD38/SD19_Build (v1)	187+50.000			18.404	41.067	0.7079	0.3235	0.3844	1.5795	0.6808	0.8987	-0.8716	-0.3573	-0.5144			0.34
12	187+60.000	190+00.000	0.0455	0.549	0.895	0.0211	0.0076	0.0135	0.0344	0.0111	0.0234	-0.0133	-0.0035	-0.0099	0.4646	0.43	
13	190+00.000	192+00.000	0.0379	0.458	0.746	0.0176	0.0063	0.0113	0.0287	0.0092	0.0195	-0.0111	-0.0029	-0.0082	0.4646	0.43	
14	192+00.000	192+39.270	0.0074	0.090	0.146	0.0035	0.0012	0.0022	0.0056	0.0018	0.0038	-0.0022	-0.0006	-0.0016	0.4646	0.43	
15	192+39.270	193+60.000	0.0229	0.276	0.451	0.0106	0.0038	0.0068	0.0173	0.0056	0.0118	-0.0067	-0.0017	-0.0050	0.4646	0.43	
16	193+60.000	197+65.000	0.0767	0.927	1.511	0.0356	0.0128	0.0228	0.0581	0.0187	0.0395	-0.0225	-0.0058	-0.0166	0.4646	0.43	
17	197+65.000	199+00.000	0.0256	0.309	0.504	0.0119	0.0043	0.0076	0.0194	0.0062	0.0132	-0.0075	-0.0019	-0.0055	0.4646	0.43	
18	199+00.000	201+63.750	0.0500	0.603	0.984	0.0232	0.0083	0.0149	0.0379	0.0121	0.0257	-0.0146	-0.0038	-0.0108	0.4646	0.43	
19	201+63.750	202+00.000	0.0069	0.083	0.135	0.0032	0.0011	0.0020	0.0052	0.0017	0.0035	-0.0020	-0.0005	-0.0015	0.4646	0.43	
20	202+00.000	207+00.000	0.0947	1.144	1.866	0.0440	0.0158	0.0282	0.0718	0.0230	0.0487	-0.0278	-0.0072	-0.0205	0.4646	0.43	
21	207+00.000	207+49.760	0.0094	0.114	0.186	0.0044	0.0016	0.0028	0.0071	0.0023	0.0048	-0.0028	-0.0007	-0.0020	0.4646	0.43	
22	207+49.760	217+74.250	0.1940	2.344	3.823	0.0902	0.0324	0.0577	0.1470	0.0472	0.0998	-0.0569	-0.0148	-0.0421	0.4646	0.43	
23	217+74.250	221+00.000	0.0617	3.596	1.215	0.1383	0.0144	0.1239	0.0467	0.0150	0.0317	0.0916	-0.0006	0.0922	2.2419	2.07	
24	221+00.000	226+00.000	0.0947	1.144	1.866	0.0440	0.0158	0.0282	0.0718	0.0230	0.0487	-0.0278	-0.0072	-0.0205	0.4646	0.43	
25	226+00.000	230+66.250	0.0883	1.067	1.740	0.0410	0.0148	0.0263	0.0669	0.0215	0.0454	-0.0259	-0.0067	-0.0192	0.4646	0.43	
26	230+66.250	231+39.700	0.0139	0.188	0.333	0.0072	0.0026	0.0046	0.0128	0.0041	0.0087	-0.0055	-0.0015	-0.0041	0.5207	0.48	
27	231+39.700	235+00.000	0.0682	0.924	1.631	0.0355	0.0130	0.0225	0.0627	0.0201	0.0426	-0.0272	-0.0071	-0.0201	0.5207	0.48	
28	235+00.000	241+61.390	0.1253	4.891	2.994	0.1881	0.1175	0.0706	0.1152	0.0370	0.0782	0.0730	0.0805	-0.0076	1.5018	1.39	
29	241+61.390	242+00.000	0.0073	0.099	0.175	0.0038	0.0014	0.0024	0.0067	0.0022	0.0046	-0.0029	-0.0008	-0.0021	0.5207	0.48	
30	242+00.000	245+14.280	0.0595	0.806	1.423	0.0310	0.0113	0.0197	0.0547	0.0176	0.0372	-0.0237	-0.0062	-0.0175	0.5207	0.48	
31	245+14.280	246+55.100	0.0267	0.322	0.525	0.0124	0.0045	0.0079	0.0202	0.0065	0.0137	-0.0078	-0.0020	-0.0058	0.4646	0.43	
32	246+55.100	248+00.000	0.0274	0.332	0.541	0.0128	0.0046	0.0082	0.0208	0.0067	0.0141	-0.0080	-0.0021	-0.0060	0.4646	0.43	
33	248+00.000	249+00.000	0.0189	3.721	0.519	0.1431	0.0060	0.1371	0.0200	0.0064	0.0136	0.1231	-0.0004	0.1236	7.5559	6.97	
34	249+00.000	251+21.980	0.0420	0.508	0.828	0.0195	0.0070	0.0125	0.0319	0.0102	0.0216	-0.0123	-0.0032	-0.0091	0.4646	0.43	
35	251+21.980	252+40.240	0.0224	0.286	0.485	0.0110	0.0040	0.0070	0.0187	0.0060	0.0127	-0.0076	-0.0020	-0.0057	0.4920	0.45	
36	252+40.240	263+22.600	0.2050	5.327	4.038	0.2049	0.0424	0.1625	0.1553	0.0499	0.1055	0.0496	-0.0074	0.0570	0.9995	0.92	
37	263+22.600	272+66.740	0.1788	2.351	4.061	0.0904	0.0329	0.0575	0.1562	0.0501	0.1060	-0.0657	-0.0172	-0.0485	0.5057	0.47	
38	272+66.740	280+00.000	0.1389	1.678	2.736	0.0645	0.0232	0.0413	0.1052	0.0338	0.0715	-0.0407	-0.0106	-0.0301	0.4646	0.43	

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
39	280+00.000	283+15.050	0.0597	0.721	1.175	0.0277	0.0100	0.0178	0.0452	0.0145	0.0307	-0.0175	-0.0045	-0.0129	0.4646	0.43	
40	283+15.050	284+08.540	0.0177	0.227	0.384	0.0087	0.0032	0.0056	0.0148	0.0047	0.0100	-0.0060	-0.0016	-0.0045	0.4920	0.45	
41	284+08.540	288+50.000	0.0836	3.861	1.647	0.1485	0.0190	0.1295	0.0634	0.0203	0.0430	0.0851	-0.0013	0.0865	1.7761	1.64	
42	288+50.000	289+00.000	0.0095	0.114	0.187	0.0044	0.0016	0.0028	0.0072	0.0023	0.0049	-0.0028	-0.0007	-0.0021	0.4646	0.43	
43	289+00.000	295+90.000	0.1307	1.579	2.575	0.0607	0.0218	0.0389	0.0990	0.0318	0.0672	-0.0383	-0.0100	-0.0284	0.4646	0.43	
44	295+90.000	296+00.000	0.0019	0.028	0.052	0.0011	0.0004	0.0007	0.0020	0.0006	0.0014	-0.0009	-0.0002	-0.0007	0.5613	0.52	
459/SD38 (v2)	296+00.000			11.436	12.695	0.4399	0.1714	0.2685	0.4883	0.2104	0.2778	-0.0484	-0.0391	-0.0093			0.37
45	296+00.000	296+10.000	0.0019	0.028	0.052	0.0011	0.0004	0.0007	0.0020	0.0006	0.0014	-0.0009	-0.0002	-0.0007	0.5613	0.52	
46	296+10.000	296+96.520	0.0164	0.198	0.323	0.0076	0.0027	0.0049	0.0124	0.0040	0.0084	-0.0048	-0.0012	-0.0036	0.4646	0.43	
47	296+96.520	298+33.660	0.0260	0.314	0.512	0.0121	0.0043	0.0077	0.0197	0.0063	0.0134	-0.0076	-0.0020	-0.0056	0.4646	0.43	
48	298+33.660	303+50.000	0.0978	1.181	1.927	0.0454	0.0163	0.0291	0.0741	0.0238	0.0503	-0.0287	-0.0074	-0.0212	0.4646	0.43	
49	303+50.000	304+50.000	0.0189	0.229	0.373	0.0088	0.0032	0.0056	0.0144	0.0046	0.0097	-0.0056	-0.0014	-0.0041	0.4646	0.43	
50	304+50.000	305+02.039	0.0099	0.119	0.194	0.0046	0.0016	0.0029	0.0075	0.0024	0.0051	-0.0029	-0.0008	-0.0021	0.4646	0.43	
51	305+02.039	309+35.490	0.0821	0.992	1.617	0.0381	0.0137	0.0244	0.0622	0.0200	0.0422	-0.0241	-0.0063	-0.0178	0.4646	0.43	
52	309+35.490	311+70.000	0.0444	0.536	0.875	0.0206	0.0074	0.0132	0.0337	0.0108	0.0229	-0.0130	-0.0034	-0.0096	0.4646	0.43	
53	311+70.000	313+25.000	0.0294	0.355	0.578	0.0136	0.0049	0.0087	0.0222	0.0071	0.0151	-0.0086	-0.0022	-0.0064	0.4646	0.43	
54	313+25.000	323+00.000	0.1847	2.231	3.638	0.0858	0.0309	0.0549	0.1399	0.0449	0.0950	-0.0541	-0.0141	-0.0401	0.4646	0.43	
55	323+00.000	323+26.980	0.0051	0.062	0.101	0.0024	0.0009	0.0015	0.0039	0.0012	0.0026	-0.0015	-0.0004	-0.0011	0.4646	0.43	
56	323+26.980	328+89.230	0.1065	1.286	2.098	0.0495	0.0178	0.0317	0.0807	0.0259	0.0548	-0.0312	-0.0081	-0.0231	0.4646	0.43	
57	328+89.230	329+81.740	0.0175	0.212	0.345	0.0081	0.0029	0.0052	0.0133	0.0043	0.0090	-0.0051	-0.0013	-0.0038	0.4646	0.43	
58	329+81.740	333+24.920	0.0650	0.936	1.738	0.0360	0.0133	0.0227	0.0669	0.0215	0.0454	-0.0308	-0.0081	-0.0227	0.5541	0.51	
59	333+24.920	334+00.000	0.0142	0.205	0.380	0.0079	0.0029	0.0050	0.0146	0.0047	0.0099	-0.0067	-0.0018	-0.0050	0.5541	0.51	
60	334+00.000	335+39.960	0.0265	7.182	0.709	0.2762	0.0084	0.2679	0.0273	0.0088	0.0185	0.2490	-0.0004	0.2494	10.4210	9.62	
61	335+39.960	342+39.000	0.1324	1.599	2.608	0.0615	0.0221	0.0394	0.1003	0.0322	0.0681	-0.0388	-0.0101	-0.0287	0.4646	0.43	
62	342+39.000	343+00.000	0.0116	0.140	0.228	0.0054	0.0019	0.0034	0.0088	0.0028	0.0059	-0.0034	-0.0009	-0.0025	0.4646	0.43	
63	343+00.000	351+20.000	0.1553	4.727	3.060	0.1818	0.1065	0.0753	0.1177	0.0378	0.0799	0.0641	0.0687	-0.0046	1.1706	1.08	
64	351+20.000	352+00.000	0.0152	0.221	0.415	0.0085	0.0032	0.0054	0.0160	0.0051	0.0108	-0.0075	-0.0020	-0.0055	0.5613	0.52	
65	352+00.000	352+20.000	0.0038	0.055	0.104	0.0021	0.0008	0.0013	0.0040	0.0013	0.0027	-0.0019	-0.0005	-0.0014	0.5613	0.52	
66	352+20.000	362+50.000	0.1951	5.207	3.843	0.2003	0.0406	0.1597	0.1478	0.0474	0.1004	0.0525	-0.0069	0.0593	1.0267	0.95	
67	362+50.000	369+14.990	0.1259	1.521	2.481	0.0585	0.0210	0.0375	0.0954	0.0306	0.0648	-0.0369	-0.0096	-0.0273	0.4646	0.43	
68	369+14.990	370+30.000	0.0218	0.305	0.553	0.0117	0.0043	0.0074	0.0213	0.0068	0.0144	-0.0095	-0.0025	-0.0070	0.5385	0.50	
69	370+30.000	370+60.000	0.0057	0.080	0.144	0.0031	0.0011	0.0019	0.0055	0.0018	0.0038	-0.0025	-0.0007	-0.0018	0.5385	0.50	
70	370+60.000	376+83.610	0.1181	4.958	2.998	0.1907	0.1212	0.0695	0.1153	0.0370	0.0783	0.0754	0.0842	-0.0088	1.6146	1.49	
71	376+83.610	378+00.000	0.0220	0.309	0.559	0.0119	0.0044	0.0075	0.0215	0.0069	0.0146	-0.0096	-0.0025	-0.0071	0.5385	0.50	
72	378+00.000	378+40.000	0.0076	0.117	0.230	0.0045	0.0017	0.0028	0.0088	0.0028	0.0060	-0.0044	-0.0012	-0.0032	0.5919	0.55	
73	378+40.000	378+60.000	0.0038	0.058	0.115	0.0022	0.0008	0.0014	0.0044	0.0014	0.0030	-0.0022	-0.0006	-0.0016	0.5919	0.55	
I90 SPEEDWAY/SD38 (v1)	378+50.000			4.683	6.719	0.1801	0.0774	0.1027	0.2584	0.1073	0.1512	-0.0783	-0.0298	-0.0485			0.16
74	378+60.000	379+00.000	0.0076	0.117	0.230	0.0045	0.0017	0.0028	0.0088	0.0028	0.0060	-0.0044	-0.0012	-0.0032	0.5919	0.55	
75	379+00.000	379+62.690	0.0119	0.166	0.301	0.0064	0.0024	0.0040	0.0116	0.0037	0.0079	-0.0052	-0.0014	-0.0038	0.5385	0.50	
76	379+62.690	385+22.970	0.1061	4.133	2.091	0.1590	0.1024	0.0566	0.0804	0.0258	0.0546	0.0785	0.0766	0.0020	1.4979	1.38	
77	385+22.970	386+60.000	0.0260	0.359	0.643	0.0138	0.0051	0.0087	0.0247	0.0079	0.0168	-0.0109	-0.0029	-0.0081	0.5314	0.49	
78	386+60.000	389+50.000	0.0549	0.759	1.361	0.0292	0.0107	0.0185	0.0524	0.0168	0.0355	-0.0232	-0.0061	-0.0171	0.5314	0.49	

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
79	389+50.000	394+00.000	0.0852	1.178	2.112	0.0453	0.0166	0.0287	0.0812	0.0261	0.0552	-0.0359	-0.0095	-0.0265	0.5314	0.49	
80	394+00.000	396+46.150	0.0466	0.644	1.155	0.0248	0.0091	0.0157	0.0444	0.0143	0.0302	-0.0197	-0.0052	-0.0145	0.5314	0.49	
81	396+46.150	397+00.000	0.0102	0.141	0.253	0.0054	0.0020	0.0034	0.0097	0.0031	0.0066	-0.0043	-0.0011	-0.0032	0.5314	0.49	
82	397+00.000	399+00.000	0.0379	0.576	1.122	0.0221	0.0083	0.0139	0.0432	0.0139	0.0293	-0.0210	-0.0056	-0.0154	0.5847	0.54	
83	399+00.000	405+75.410	0.1279	1.768	3.170	0.0680	0.0249	0.0430	0.1219	0.0391	0.0828	-0.0539	-0.0142	-0.0398	0.5314	0.49	
84	405+75.410	406+00.000	0.0047	0.056	0.092	0.0022	0.0008	0.0014	0.0035	0.0011	0.0024	-0.0014	-0.0004	-0.0010	0.4646	0.43	
85	406+00.000	407+00.000	0.0189	0.254	0.446	0.0098	0.0036	0.0062	0.0172	0.0055	0.0116	-0.0074	-0.0019	-0.0054	0.5164	0.48	
86	407+00.000	443+25.000	0.6866	25.399	13.526	0.9769	0.4312	0.5456	0.5202	0.1670	0.3532	0.4567	0.2642	0.1924	1.4229	1.31	
87	443+25.000	445+50.000	0.0426	0.515	0.840	0.0198	0.0071	0.0127	0.0323	0.0104	0.0219	-0.0125	-0.0032	-0.0092	0.4646	0.43	
88	445+50.000	452+50.000	0.1326	4.452	2.612	0.1712	0.1044	0.0669	0.1005	0.0322	0.0682	0.0708	0.0721	-0.0013	1.2917	1.19	
89	452+50.000	459+00.000	0.1231	1.487	2.425	0.0572	0.0206	0.0366	0.0933	0.0299	0.0633	-0.0361	-0.0094	-0.0267	0.4646	0.43	
90	459+00.000	460+00.000	0.0189	0.254	0.446	0.0098	0.0036	0.0062	0.0172	0.0055	0.0116	-0.0074	-0.0019	-0.0054	0.5164	0.48	
91	460+00.000	460+58.580	0.0111	0.134	0.219	0.0052	0.0019	0.0033	0.0084	0.0027	0.0057	-0.0033	-0.0008	-0.0024	0.4646	0.43	
92	460+58.580	485+61.230	0.4740	8.577	9.338	0.3299	0.0899	0.2399	0.3592	0.1153	0.2439	-0.0293	-0.0253	-0.0039	0.6959	0.64	
93	485+61.230	503+00.000	0.3293	6.829	6.488	0.2627	0.0647	0.1979	0.2495	0.0801	0.1694	0.0131	-0.0154	0.0285	0.7976	0.74	
94	503+00.000	507+00.000	0.0758	3.766	1.492	0.1448	0.0174	0.1275	0.0574	0.0184	0.0390	0.0874	-0.0010	0.0885	1.9120	1.76	
95	507+00.000	508+00.000	0.0189	0.217	0.344	0.0084	0.0030	0.0054	0.0132	0.0042	0.0090	-0.0049	-0.0013	-0.0036	0.4416	0.41	
96	508+00.000	508+08.240	0.0016	0.018	0.028	0.0007	0.0002	0.0004	0.0011	0.0003	0.0007	-0.0004	-0.0001	-0.0003	0.4416	0.41	
97	508+08.240	510+30.000	0.0420	0.482	0.762	0.0185	0.0066	0.0119	0.0293	0.0094	0.0199	-0.0108	-0.0028	-0.0080	0.4416	0.41	
98	510+30.000	512+00.000	0.0322	0.389	0.634	0.0150	0.0054	0.0096	0.0244	0.0078	0.0166	-0.0094	-0.0025	-0.0070	0.4646	0.43	
463/SD38 (v1)	512+00.000			87.655	169.483	3.3714	1.6033	1.7681	6.5186	2.8095	3.7091	-3.1472	-1.2062	-1.9410			0.88
99	512+00.000	513+00.000	0.0189	0.626	1.666	0.0241	0.0095	0.0145	0.0641	0.0206	0.0435	-0.0400	-0.0110	-0.0290	1.2714	0.33	
100	513+00.000	515+00.000	0.0379	1.092	2.395	0.0420	0.0161	0.0259	0.0921	0.0296	0.0626	-0.0501	-0.0135	-0.0366	1.1086	0.29	
101	515+00.000	520+00.000	0.0947	2.689	5.796	0.1034	0.0394	0.0640	0.2229	0.0716	0.1514	-0.1195	-0.0322	-0.0873	1.0920	0.28	
102	520+00.000	520+49.150	0.0093	0.308	0.819	0.0118	0.0047	0.0071	0.0315	0.0101	0.0214	-0.0197	-0.0054	-0.0142	1.2714	0.33	
103	520+49.150	521+00.000	0.0096	0.343	1.049	0.0132	0.0054	0.0078	0.0403	0.0130	0.0274	-0.0271	-0.0076	-0.0195	1.3705	0.36	
104	521+00.000	523+38.600	0.0452	1.409	3.425	0.0542	0.0211	0.0331	0.1317	0.0423	0.0895	-0.0776	-0.0212	-0.0564	1.1991	0.31	
105	523+38.600	524+00.000	0.0116	0.362	0.881	0.0139	0.0054	0.0085	0.0339	0.0109	0.0230	-0.0200	-0.0054	-0.0145	1.1991	0.31	
106	524+00.000	525+00.000	0.0189	0.675	2.063	0.0260	0.0105	0.0154	0.0793	0.0255	0.0539	-0.0534	-0.0149	-0.0384	1.3705	0.36	
Main Ave/SD38 (v1)	524+50.000			42.110	132.778	1.6196	0.6778	0.9418	5.1069	2.2011	2.9058	-3.4872	-1.5232	-1.9640			0.37
107	525+00.000	525+18.580	0.0035	0.110	0.267	0.0042	0.0016	0.0026	0.0103	0.0033	0.0070	-0.0060	-0.0016	-0.0044	1.1991	0.31	
108	525+18.580	528+00.000	0.0533	1.662	4.040	0.0639	0.0249	0.0390	0.1554	0.0499	0.1055	-0.0915	-0.0250	-0.0665	1.1991	0.31	
109	528+00.000	529+00.000	0.0189	0.675	2.063	0.0260	0.0105	0.0154	0.0793	0.0255	0.0539	-0.0534	-0.0149	-0.0384	1.3705	0.36	
110	529+00.000	539+00.000	0.1894	13.262	14.355	0.5101	0.1129	0.3971	0.5521	0.1772	0.3749	-0.0420	-0.0643	0.0223	2.6933	0.70	
111	539+00.000	539+50.000	0.0095	0.299	0.742	0.0115	0.0045	0.0070	0.0285	0.0092	0.0194	-0.0170	-0.0047	-0.0124	1.2152	0.32	
112	539+50.000	540+00.000	0.0095	0.299	0.742	0.0115	0.0045	0.0070	0.0285	0.0092	0.0194	-0.0170	-0.0047	-0.0124	1.2152	0.32	
113	540+00.000	540+50.000	0.0095	0.299	0.742	0.0115	0.0045	0.0070	0.0285	0.0092	0.0194	-0.0170	-0.0047	-0.0124	1.2152	0.32	
114	540+50.000	540+74.370	0.0046	0.165	0.503	0.0063	0.0026	0.0038	0.0193	0.0062	0.0131	-0.0130	-0.0036	-0.0094	1.3705	0.36	
115	540+74.370	541+00.000	0.0049	0.161	0.427	0.0062	0.0024	0.0037	0.0164	0.0053	0.0111	-0.0102	-0.0028	-0.0074	1.2714	0.33	
116	541+00.000	541+50.000	0.0095	0.313	0.833	0.0120	0.0048	0.0073	0.0320	0.0103	0.0218	-0.0200	-0.0055	-0.0145	1.2714	0.33	
Vandemark/SD38 (v1)	541+50.000			28.334	74.904	1.0898	0.5033	0.5865	2.8809	1.2417	1.6393	-1.7912	-0.7384	-1.0527			0.27
117	541+50.000	541+70.000	0.0038	0.125	0.333	0.0048	0.0019	0.0029	0.0128	0.0041	0.0087	-0.0080	-0.0022	-0.0058	1.2714	0.33	

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
118	541+70.000	542+30.000	0.0114	0.376	1.000	0.0144	0.0057	0.0087	0.0384	0.0123	0.0261	-0.0240	-0.0066	-0.0174	1.2714	0.33	
119	542+30.000	542+64.000	0.0064	0.186	0.407	0.0071	0.0027	0.0044	0.0157	0.0050	0.0106	-0.0085	-0.0023	-0.0062	1.1086	0.29	
120	542+64.000	543+34.000	0.0133	0.382	0.838	0.0147	0.0056	0.0091	0.0322	0.0104	0.0219	-0.0175	-0.0047	-0.0128	1.1086	0.29	
121	543+34.000	544+00.000	0.0125	0.360	0.790	0.0139	0.0053	0.0086	0.0304	0.0098	0.0206	-0.0165	-0.0045	-0.0121	1.1086	0.29	
122	544+00.000	545+00.000	0.0189	0.566	1.300	0.0218	0.0084	0.0134	0.0500	0.0160	0.0339	-0.0282	-0.0076	-0.0206	1.1497	0.30	
123	545+00.000	548+23.000	0.0612	1.829	4.198	0.0703	0.0271	0.0432	0.1615	0.0518	0.1096	-0.0911	-0.0247	-0.0664	1.1497	0.30	
124	548+23.000	553+70.000	0.1036	10.151	7.109	0.3904	0.2627	0.1277	0.2734	0.0878	0.1857	0.1170	0.1750	-0.0580	3.7686	0.98	
125	553+70.000	554+00.000	0.0057	0.194	0.542	0.0074	0.0030	0.0045	0.0209	0.0067	0.0142	-0.0134	-0.0037	-0.0097	1.3100	0.34	
126	554+00.000	554+20.000	0.0038	0.129	0.361	0.0050	0.0020	0.0030	0.0139	0.0045	0.0094	-0.0089	-0.0025	-0.0065	1.3100	0.34	
127	554+20.000	560+00.000	0.1098	3.284	7.538	0.1263	0.0487	0.0776	0.2899	0.0931	0.1969	-0.1636	-0.0444	-0.1193	1.1497	0.30	
128	560+00.000	562+58.560	0.0490	1.464	3.360	0.0563	0.0217	0.0346	0.1292	0.0415	0.0878	-0.0729	-0.0198	-0.0532	1.1497	0.30	
129	562+58.560	564+00.000	0.0268	0.801	1.838	0.0308	0.0119	0.0189	0.0707	0.0227	0.0480	-0.0399	-0.0108	-0.0291	1.1497	0.30	
130	564+00.000	565+00.000	0.0189	0.566	1.300	0.0218	0.0084	0.0134	0.0500	0.0160	0.0339	-0.0282	-0.0076	-0.0206	1.1497	0.30	
131	565+00.000	565+77.000	0.0146	0.494	1.133	0.0190	0.0073	0.0117	0.0436	0.0140	0.0296	-0.0246	-0.0067	-0.0179	1.3020	0.30	
132	565+77.000	566+10.000	0.0063	0.241	0.675	0.0093	0.0037	0.0056	0.0260	0.0083	0.0176	-0.0167	-0.0046	-0.0121	1.4835	0.34	
2nd/SD38 (v2)	566+00.000			51.588	119.976	1.9842	0.7408	1.2433	4.6145	1.9888	2.6256	-2.6303	-1.2480	-1.3823			0.41
133	566+10.000	566+50.000	0.0076	0.292	0.819	0.0112	0.0045	0.0067	0.0315	0.0101	0.0214	-0.0203	-0.0056	-0.0146	1.4835	0.34	
134	566+50.000	569+37.000	0.0544	17.818	4.224	0.6853	0.2643	0.4210	0.1625	0.0522	0.1103	0.5228	0.2121	0.3107	12.6074	2.89	
135	569+37.000	569+70.000	0.0063	0.228	0.581	0.0088	0.0034	0.0053	0.0223	0.0072	0.0152	-0.0136	-0.0037	-0.0098	1.4018	0.32	
West Central School/SD38 (v2)	569+50.000			18.933	73.624	0.7282	0.3383	0.3899	2.8317	1.1752	1.6565	-2.1035	-0.8368	-1.2667			0.16
136	569+70.000	570+00.000	0.0057	0.192	0.442	0.0074	0.0029	0.0045	0.0170	0.0055	0.0115	-0.0096	-0.0026	-0.0070	1.3020	0.30	
137	570+00.000	575+00.000	0.0947	3.160	7.122	0.1215	0.0467	0.0748	0.2739	0.0879	0.1860	-0.1524	-0.0412	-0.1112	1.2834	0.29	
138	575+00.000	579+50.000	0.0852	2.885	6.623	0.1110	0.0428	0.0682	0.2547	0.0818	0.1730	-0.1438	-0.0390	-0.1048	1.3020	0.30	
139	579+50.000	579+70.000	0.0038	0.146	0.409	0.0056	0.0022	0.0034	0.0157	0.0051	0.0107	-0.0101	-0.0028	-0.0073	1.4835	0.34	
140	579+70.000	580+10.000	0.0076	0.292	0.819	0.0112	0.0045	0.0067	0.0315	0.0101	0.0214	-0.0203	-0.0056	-0.0146	1.4835	0.34	
All Segments			7.7398	213.597	230.845	8.2153	3.0105	5.2047	8.8786	2.8500	6.0286	-0.6634	0.1605	-0.8239	1.0614	0.68	
All Intersections				263.144	631.248	10.1209	4.4358	5.6852	24.2788	10.4147	13.8641	-14.1579	-5.9790	-8.1789			0.39
Total			7.7398	476.741	862.093	18.3362	7.4463	10.8899	33.1574	13.2648	19.8927	-14.8212	-5.8185	-9.0028	2.3691		

Table 8. Expected Crash Frequencies and Rates by Horizontal Design Element (Section 1)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)
Tangent	171+44.000	174+52.690	0.0585	0.720	1.188	0.0277	0.0100	0.0177	0.0457	0.0147	0.0310	-0.0180	-0.0047	-0.0133	0.4733	0.44
Simple Curve 1	174+52.690	178+85.250	0.0819	1.254	2.459	0.0482	0.0180	0.0302	0.0946	0.0304	0.0642	-0.0464	-0.0123	-0.0340	0.5886	0.54
Tangent	178+85.250	230+66.250	0.9812	14.723	19.390	0.5663	0.1684	0.3979	0.7458	0.2394	0.5064	-0.1795	-0.0710	-0.1085	0.5771	0.53
Simple Curve 2	230+66.250	245+14.280	0.2742	6.908	6.555	0.2657	0.1459	0.1198	0.2521	0.0809	0.1712	0.0136	0.0649	-0.0513	0.9688	0.89
Tangent	245+14.280	263+22.600	0.3425	10.496	6.937	0.4037	0.0685	0.3352	0.2668	0.0856	0.1812	0.1369	-0.0172	0.1541	1.1787	1.09
Simple Curve 3	263+22.600	272+66.740	0.1788	2.351	4.061	0.0904	0.0329	0.0575	0.1562	0.0501	0.1060	-0.0657	-0.0172	-0.0485	0.5057	0.47
Tangent	272+66.740	296+96.470	0.4602	8.432	9.130	0.3243	0.0823	0.2420	0.3511	0.1127	0.2384	-0.0268	-0.0304	0.0036	0.7047	0.65
Simple Curve 4	296+96.470	296+96.520	0.0000	0.000	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-0.0000	-0.0000	-0.0000	0.4646	0.43
Tangent	296+96.520	329+81.740	0.6222	7.516	12.258	0.2891	0.1040	0.1851	0.4715	0.1513	0.3201	-0.1824	-0.0474	-0.1350	0.4646	0.43
Simple Curve 5	329+81.740	335+39.960	0.1057	8.323	2.828	0.3201	0.0246	0.2956	0.1088	0.0349	0.0738	0.2114	-0.0103	0.2217	3.0280	2.79
Tangent	335+39.960	369+14.990	0.6392	13.471	12.739	0.5181	0.1961	0.3220	0.4900	0.1573	0.3327	0.0282	0.0389	-0.0107	0.8106	0.75
Simple Curve 6	369+14.990	379+62.690	0.1984	6.109	5.131	0.2350	0.1376	0.0974	0.1973	0.0633	0.1340	0.0376	0.0742	-0.0366	1.1841	1.09
Tangent	379+62.690	385+22.970	0.1061	4.133	2.091	0.1590	0.1024	0.0566	0.0804	0.0258	0.0546	0.0785	0.0766	0.0020	1.4979	1.38
Simple Curve 7	385+22.970	405+75.410	0.3887	5.424	9.817	0.2086	0.0767	0.1319	0.3776	0.1212	0.2564	-0.1690	-0.0445	-0.1245	0.5366	0.50
Tangent	405+75.410	520+49.150	2.1731	57.544	50.368	2.2132	0.8301	1.3832	1.9372	0.6218	1.3154	0.2760	0.2082	0.0678	1.0185	0.88
Simple Curve 8	520+49.150	540+74.370	0.3836	19.560	30.871	0.7523	0.2085	0.5438	1.1874	0.3811	0.8062	-0.4350	-0.1726	-0.2624	1.9614	0.51
Tangent	540+74.370	580+10.000	0.7454	46.632	55.023	1.7936	0.8047	0.9889	2.1163	0.6793	1.4370	-0.3227	0.1253	-0.4481	2.4062	0.58

Table 9. Predicted Crash Frequencies by Year (Section 1)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2025	21.56	8.58	39.798	12.98	60.202
2026	23.15	9.22	39.843	13.93	60.157
2027	24.72	9.86	39.881	14.86	60.119
2028	26.28	10.49	39.913	15.79	60.087
2029	27.83	11.12	39.940	16.71	60.060
2030	28.45	11.37	39.948	17.09	60.052
2031	29.08	11.62	39.955	17.46	60.045
2032	29.71	11.87	39.963	17.84	60.037
2033	30.34	12.13	39.971	18.21	60.029
2034	30.97	12.38	39.978	18.59	60.022
2035	31.61	12.64	39.985	18.97	60.015
2036	32.24	12.89	39.992	19.35	60.008
2037	32.88	13.15	39.999	19.73	60.001
2038	33.52	13.41	40.006	20.11	59.994
2039	34.16	13.67	40.012	20.49	59.988
2040	34.80	13.93	40.019	20.87	59.981
2041	35.57	14.24	40.027	21.33	59.973
2042	36.35	14.55	40.035	21.80	59.965
2043	37.12	14.87	40.043	22.26	59.957
2044	37.90	15.18	40.051	22.72	59.949
2045	38.68	15.49	40.058	23.19	59.942
2046	39.47	15.81	40.066	23.65	59.934
2047	40.25	16.13	40.073	24.12	59.927
2048	41.03	16.45	40.080	24.59	59.920
2049	41.82	16.76	40.087	25.05	59.913
2050	42.61	17.09	40.094	25.53	59.906
Total	862.09	344.88	40.005	517.21	59.995
Average	33.16	13.27	40.005	19.89	59.995

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 10. Expected Crash Frequencies by Year (Section 1)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2025	11.92	4.82	40.399	7.11	59.596
2026	12.80	5.18	40.445	7.62	59.551
2027	13.67	5.53	40.483	8.14	59.514
2028	14.53	5.89	40.516	8.64	59.482
2029	15.39	6.24	40.543	9.15	59.455
2030	15.73	6.38	40.551	9.35	59.447
2031	16.08	6.52	40.559	9.56	59.440
2032	16.43	6.67	40.567	9.77	59.432
2033	16.78	6.81	40.574	9.97	59.425
2034	17.13	6.95	40.582	10.18	59.418
2035	17.48	7.09	40.589	10.38	59.410
2036	17.83	7.24	40.596	10.59	59.404
2037	18.18	7.38	40.603	10.80	59.397
2038	18.54	7.53	40.610	11.01	59.390
2039	18.89	7.67	40.617	11.22	59.384
2040	19.25	7.82	40.624	11.43	59.377
2041	19.67	7.99	40.632	11.68	59.369
2042	20.10	8.17	40.640	11.93	59.361
2043	20.53	8.34	40.648	12.18	59.353
2044	20.96	8.52	40.656	12.44	59.345
2045	21.39	8.70	40.664	12.69	59.338
2046	21.82	8.88	40.671	12.95	59.330
2047	22.26	9.05	40.678	13.20	59.323
2048	22.69	9.23	40.686	13.46	59.316
2049	23.13	9.41	40.693	13.72	59.309
2050	23.56	9.59	40.700	13.97	59.302
Total	476.74	193.60	40.610	283.14	59.390
Average	18.34	7.45	40.610	10.89	59.390

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 11. Comparing Predicted and Expected Crashes for the Evaluation Period (Section 1)

Scope	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
Predicted	862.09	344.88	40.005	517.21	59.995
Expected	476.74	193.60	40.610	283.14	59.390
Expected - Predicted	-385.35	-151.28		-234.07	
Percent Difference	-80.83	-78.14		-82.67	

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 12. Expected Crash Type Distribution (Section 1)

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	2.97	0.6	24.90	5.2	25.84	5.4
Highway Segment	Collision with Bicycle	0.31	0.1	0.14	0.0	0.43	0.1
Highway Segment	Other Single-vehicle Collision	0.55	0.1	3.92	0.8	4.49	0.9
Highway Segment	Overturned	2.90	0.6	2.03	0.4	5.34	1.1
Highway Segment	Collision with Pedestrian	0.55	0.1	0.14	0.0	0.64	0.1
Highway Segment	Run Off Road	42.66	9.0	68.34	14.3	111.28	23.4
Highway Segment	Total Single Vehicle Crashes	49.94	10.5	99.46	20.9	148.02	31.1
Highway Segment	Angle Collision	7.91	1.7	9.74	2.0	18.16	3.8
Highway Segment	Head-on Collision	2.66	0.6	0.41	0.1	3.42	0.7
Highway Segment	Other Multiple-vehicle Collision	2.04	0.4	4.06	0.9	5.77	1.2
Highway Segment	Rear-end Collision	12.91	2.7	16.51	3.5	30.33	6.4
Highway Segment	Sideswipe	2.97	0.6	5.14	1.1	7.90	1.7
Highway Segment	Total Multiple Vehicle Crashes	28.49	6.0	35.86	7.5	65.57	13.8
Highway Segment	Total Highway Segment Crashes	78.43	16.5	135.32	28.4	213.60	44.8
Intersection	Collision with Animal	0.71	0.1	2.22	0.5	2.84	0.6
Intersection	Collision with Bicycle	0.12	0.0	0.15	0.0	0.26	0.1
Intersection	Other Single-vehicle Collision	0.54	0.1	1.61	0.3	2.10	0.4
Intersection	Overturned	0.86	0.2	0.63	0.1	1.50	0.3
Intersection	Collision with Pedestrian	0.12	0.0	0.15	0.0	0.26	0.1
Intersection	Run Off Road	12.42	2.6	22.60	4.7	34.98	7.3
Intersection	Total Single Vehicle Crashes	14.77	3.1	27.36	5.7	41.97	8.8
Intersection	Angle Collision	58.58	12.3	50.48	10.6	108.83	22.8
Intersection	Head-on Collision	7.15	1.5	3.79	0.8	10.81	2.3
Intersection	Other Multiple-vehicle Collision	4.93	1.0	5.42	1.1	10.33	2.2
Intersection	Rear-end Collision	24.76	5.2	39.65	8.3	64.53	13.5
Intersection	Sideswipe	5.15	1.1	21.12	4.4	26.48	5.6
Intersection	Total Multiple Vehicle Crashes	100.56	21.1	120.46	25.3	220.99	46.4
Intersection	Total Intersection Crashes	115.33	24.2	147.81	31.0	262.95	55.2
	Total Crashes	193.76	40.7	283.14	59.4	476.55	100.0

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 13. Evaluation Message

Start Location (Sta. ft)	End Location (Sta. ft)	Message
580+00.000	580+00.000	Warning: for intersection #3 (580+00.000 to 580+00.000), SE SD-38 at 580+00.000 has more than one lane exiting. No intersection crash prediction computed.
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,560 vpd) for 2018 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,560 vpd) for 2019 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,560 vpd) for 2020 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,560 vpd) for 2021 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,560 vpd) for 2022 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
580+00.000	580+00.000	Warning: for intersection #3 (580+00.000 to 580+00.000), SE SD-38 at 580+00.000 has more than one lane exiting. No intersection crash prediction computed.
187+50.000	187+50.000	Warning: for intersection #5 (187+50.000 to 187+50.000), minor road traffic volume (3,503 vpd) for 2049 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
187+50.000	187+50.000	Warning: for intersection #5 (187+50.000 to 187+50.000), minor road traffic volume (3,570 vpd) for 2050 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,802 vpd) for 2025 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,882 vpd) for 2026 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (3,963 vpd) for 2027 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,044 vpd) for 2028 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,125 vpd) for 2029 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,221 vpd) for 2030 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,318 vpd) for 2031 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,415 vpd) for 2032 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,512 vpd) for 2033 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST

Start Location (Sta. ft)	End Location (Sta. ft)	Message
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,609 vpd) for 2034 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,705 vpd) for 2035 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,802 vpd) for 2036 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,899 vpd) for 2037 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (4,996 vpd) for 2038 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,093 vpd) for 2039 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,190 vpd) for 2040 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,308 vpd) for 2041 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,427 vpd) for 2042 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,545 vpd) for 2043 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,664 vpd) for 2044 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,782 vpd) for 2045 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (5,901 vpd) for 2046 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (6,019 vpd) for 2047 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (6,138 vpd) for 2048 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (6,256 vpd) for 2049 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST
512+00.000	512+00.000	Warning: for intersection #7 (512+00.000 to 512+00.000), minor road traffic volume (6,375 vpd) for 2050 is not within the model limit (3,500 vpd) for reliable results for intersection type 4ST

Interactive Highway Safety Design Model

Crash Prediction Evaluation Report

June 10, 2024

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Report Overview

Report Generated: Jun 10, 2024 10:07 AM
Report Template: System: Single Page, 508 Compliant [System] (mlcpm5, Dec 5, 2019 2:16 PM)

Evaluation Date: Mon Jun 10 10:05:34 CDT 2024
IHSDM Version: v17.0.0 (Sep 22, 2021)
Crash Prediction Module: v12.0.0 (Sep 22, 2021)

User Name: naveen.mallipaddi
Organization Name:
Phone:
E-Mail:

Project Title: SD-38_Build_Option3_I90EBRamp_I
Project Comment: Created Mon Mar 27 16:47:43 CDT 2023
Project Unit System: U.S. Customary

Highway Title: SD-38
Highway Comment: Created Mon Mar 27 16:49:47 CDT 2023
Highway Version: 17

Evaluation Title: Evaluation 51
Evaluation Comment: Created Mon Jun 10 10:01:57 CDT 2024

Minimum Location: 585+00.000
Maximum Location: 974+11.000

Policy for Superelevation: AASHTO 2011 U.S. Customary
Calibration: HSM Configuration
Crash Distribution: HSM Configuration
Model/CMF: HSM Configuration

First Year of Analysis: 2025
Last Year of Analysis: 2050
Empirical-Bayes Analysis: Site-Specific
Highway with Crash History: SD-38
Highway with Crash History Comment: Created Mon Mar 27 16:49:47 CDT 2023
Highway with Crash History Version: 17
First Year of Observed Crashes: 2018
Last Year of Observed Crashes: 2022

Disclaimer Regarding Crash Prediction Method

IMPORTANT NOTICE ABOUT COMPARING RESULTS FROM HIGHWAY SAFETY MANUAL FIRST EDITION (2010) MODELS TO RESULTS FROM NEW MODELS DEVELOPED UNDER NCHRP PROJECTS 17-70, 17-58, AND 17-68

Since the publication of the Highway Safety Manual - First Edition (HSM-1), in 2010 by the American Association of State Highway and Transportation Officials (AASHTO), multiple research efforts have been undertaken through the National Cooperative Highway Research Program (NCHRP) to develop safety performance models for road segment and intersection facility types that were not initially reflected in the HSM-1, in order to expand the breadth and depth of the HSM in the future.

The IHSDM Crash Prediction Module (CPM) is intended as a faithful implementation of HSM Part C predictive methods. As NCHRP projects to develop new predictive methods for the HSM are completed, FHWA works to incorporate the new methods into IHSDM, sometimes in advance of publication in the HSM. The following new crash predictive methods have been accepted by NCHRP project panels and incorporated into IHSDM, while pending AASHTO's approval for incorporation into a future edition of the HSM:

- Roundabouts: completed in 2018 under NCHRP Project 17-70, the new methods will provide improved outcomes for the safety analysis of roundabouts.
- 6+ lane and one-way urban/suburban arterials (including models for segments and intersections): completed under NCHRP Project 17-58.
- Intersection crash prediction methods for some intersection configurations and traffic control types not currently addressed in the HSM (e.g., all-way stop; rural 3-leg signalized; 3-leg stop-controlled where the major leg turns; urban 5-leg signalized; urban high-speed intersections): completed in 2021 under NCHRP Project 17-68.

However, in the absence of local calibration factors (see HSM-1 Part C, Appendix A for guidance on calibration of the predictive models), it is neither appropriate nor advisable to directly compare the results from new models (from NCHRP Projects 17-58, 17-68, and 17-70) to results from HSM-1 models, as the models were not calibrated to the same base state data sets, and consequently can produce unexpected results. If local calibration factors are available and applied to both new models and HSM-1 models, then it may be appropriate to directly compare the results.*[Note: Work being performed under NCHRP Project 17-72 (Update of Crash Modification Factors for the Highway Safety Manual) is expected to re-calibrate many of the old (HSM-1) and new (e.g., NCHRP 17-70) models to data from a single (or small number of) states, that would allow results from all models to be directly compared.]*

The models produced for NCHRP Project 17-70 have independent value in terms of informing the design of a roundabout and assessing the effects of different design characteristics on the expected safety performance of a roundabout.

The HSM-1 interim method previously included in IHSDM for evaluating roundabouts on urban/suburban arterials (i.e., evaluating an existing intersection and then applying a Crash Modification Factor for replacing the existing intersection with a roundabout) has been deactivated in IHSDM, to minimize any confusion with the new roundabout methodology.

Section Types

Section 3 Evaluation

Section: Section 3
Evaluation Start Location: 585+00.000
Evaluation End Location: 948+50.000
Area Type: Rural
Functional Class: Arterial
Type of Alignment: Undivided/Divided Multilane
Model Category: Rural, Multilane
Calibration Factor: 3ST=1.0; 4D=1.0; 4ST=1.0; 4U=1.0; RT_ST_FI=1.0; RT_ST_PDO=1.0;

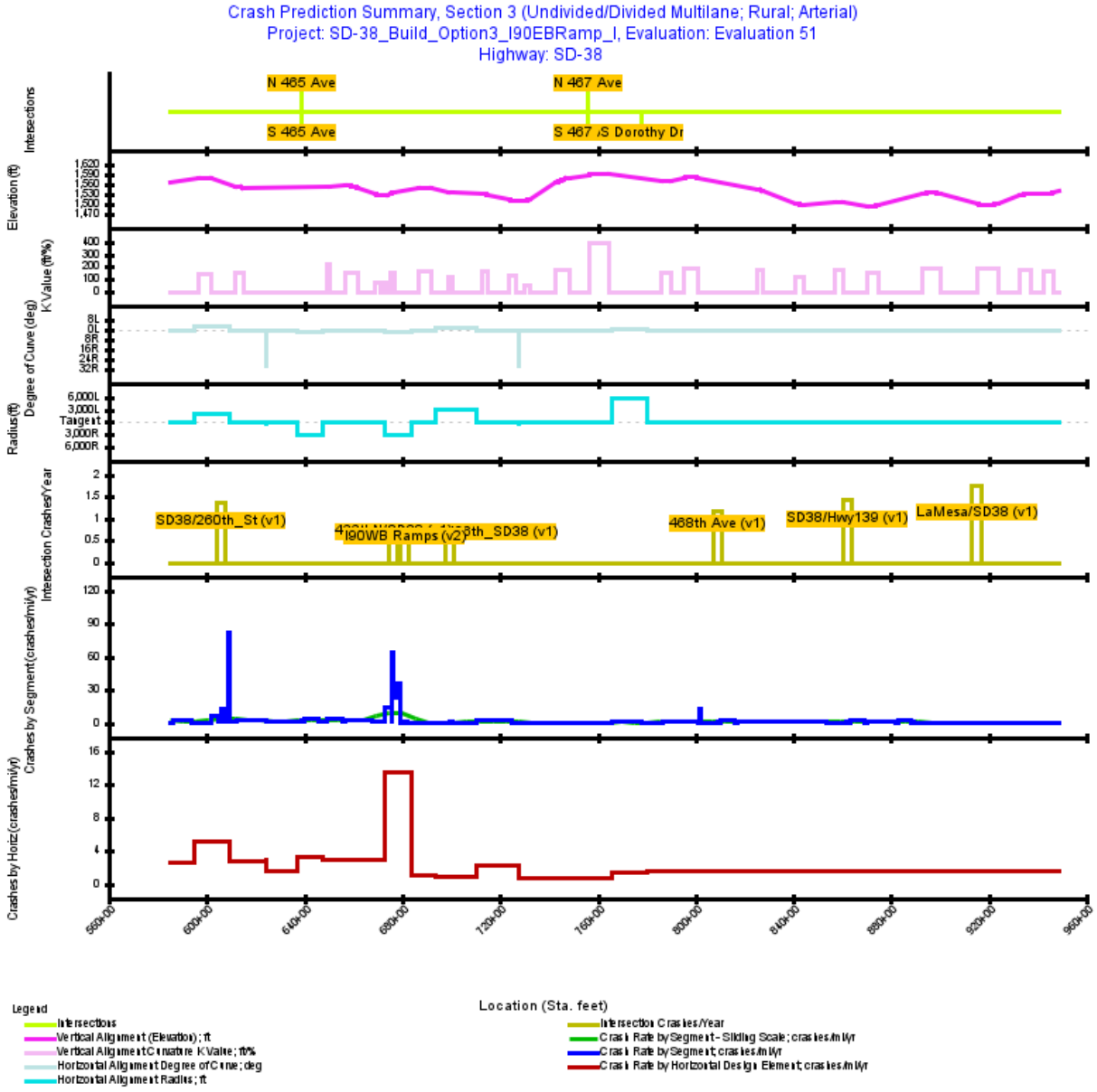


Figure 1. Crash Prediction Summary (Section 3)

Table 1. Observed Crashes Used in the Evaluation (Section 3)

Year	Observed Crashes	Total Crashes Used	FI Crashes	FI no/C Crashes	PDO Crashes
2018	8	8	6	5	2
2019	10	10	4	0	6
2020	7	7	3	2	4
2021	9	9	5	2	4
2022	9	9	5	1	4
All Years	43 [1]	43	23	10	20

Footnotes

[1] Note: Observed crash data that does not comply with the associated CPM model requirements may not be used in EB processing.

Table 2. Evaluation Highway - Homogeneous Segments (Section 3)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
1	Rural Multi-Lane Segment Four-lane Divided	585+00.000	586+00.000	100.00	0.0189	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	8.40	Non-Traversable Median	8.40	false	false		
2	Rural Multi-Lane Segment Four-lane Divided	586+00.000	593+75.000	775.00	0.1468	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	11.90	Non-Traversable Median	11.90	false	false		
3	Rural Multi-Lane Segment Four-lane Divided	593+75.000	594+84.940	109.94	0.0208	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	15.44	Non-Traversable Median	15.44	false	false		
4	Rural Multi-Lane Segment Four-lane Divided	594+84.940	600+00.000	515.06	0.0975	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	17.94	Non-Traversable Median	17.94	false	false		
5	Rural Multi-Lane Segment Four-lane Divided	600+00.000	600+42.000	42.00	0.0080	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	17.48	Non-Traversable Median	17.48	false	false		
6	Rural Multi-Lane Segment Four-lane Divided	600+42.000	601+00.000	58.00	0.0110	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	11.48	Non-Traversable Median	11.48	false	false		
7	Rural Multi-Lane Segment Four-lane Divided	601+00.000	602+00.000	100.00	0.0189	2025: 7,087; 2026: 8,007; 2027: 8,928; 2028: 9,849; 2029: 10,770; 2030: 10,937; 2031: 11,104; 2032: 11,271; 2033: 11,439; 2034: 11,606; 2035: 11,773; 2036: 11,940; 2037: 12,108; 2038: 12,275; 2039: 12,442; 2040: 12,610; 2041: 12,806; 2042: 13,002; 2043: 13,198; 2044: 13,394; 2045: 13,590; 2046: 13,786; 2047: 13,982; 2048: 14,178; 2049: 14,374; 2050: 14,570	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
8	Rural Multi-Lane Segment Four-lane Divided	602+00.000	605+00.000	300.00	0.0568	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
9	Rural Multi-Lane Segment Four-lane Divided	605+00.000	605+10.000	10.00	0.0019	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	0.00	8.00	Non-Traversable Median	20.00	false	false		
10	Rural Multi-Lane Segment Four-lane Divided	605+10.000	605+40.000	30.00	0.0057	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	0.00	8.00	Traversable Median	20.00	false	false		
11	Rural Multi-Lane Segment Four-lane Undivided	605+40.000	605+60.000	20.00	0.0038	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	0.00	0.00	None	0.00	false	false	0:1	0:1
12	Rural Multi-Lane Segment Four-lane Undivided	605+60.000	605+70.000	10.00	0.0019	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
13	Rural Multi-Lane Segment Four-lane Undivided	605+70.000	605+75.000	5.00	0.0009	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
14	Rural Multi-Lane Segment Four-lane Undivided	605+75.000	606+00.000	25.00	0.0047	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
15	Rural Multi-Lane Segment Four-lane Divided	606+00.000	607+50.000	150.00	0.0284	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
16	Rural Multi-Lane Segment Four-lane Divided	607+50.000	609+00.000	150.00	0.0284	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
17	Rural Multi-Lane Segment Four-lane Divided	609+00.000	609+21.930	21.93	0.0042	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
18	Rural Multi-Lane Segment Four-lane Divided	609+21.930	611+40.000	218.07	0.0413	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
19	Rural Multi-Lane Segment Four-lane Divided	611+40.000	611+50.000	10.00	0.0019	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
20	Rural Multi-Lane Segment Four-lane Divided	611+50.000	612+09.000	59.00	0.0112	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	11.54	Non-Traversable Median	11.54	false	false		
21	Rural Multi-Lane Segment Four-lane Divided	612+09.000	612+50.000	41.00	0.0078	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	17.54	Non-Traversable Median	17.54	false	false		
22	Rural Multi-Lane Segment Four-lane Divided	612+50.000	624+64.530	1,214.53	0.2300	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
23	Rural Multi-Lane Segment Four-lane Divided	624+64.530	631+30.000	665.47	0.1260	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
24	Rural Multi-Lane Segment Four-lane Divided	631+30.000	631+81.000	51.00	0.0097	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	17.45	Non-Traversable Median	17.45	false	false		
25	Rural Multi-Lane Segment Four-lane Divided	631+81.000	632+50.000	69.00	0.0131	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	11.45	Non-Traversable Median	11.45	false	false		
26	Rural Multi-Lane Segment Four-lane Divided	632+50.000	636+92.820	442.82	0.0839	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
27	Rural Multi-Lane Segment Four-lane Divided	636+92.820	638+80.000	187.18	0.0355	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
28	Rural Multi-Lane Segment Four-lane Divided	638+80.000	639+00.000	20.00	0.0038	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
29	Rural Multi-Lane Segment Four-lane Undivided	639+00.000	640+00.000	100.00	0.0189	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
30	Rural Multi-Lane Segment Four-lane Divided	640+00.000	640+20.000	20.00	0.0038	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
31	Rural Multi-Lane Segment Four-lane Divided	640+20.000	645+50.000	530.00	0.1004	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
32	Rural Multi-Lane Segment Four-lane Divided	645+50.000	646+30.000	80.00	0.0152	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
33	Rural Multi-Lane Segment Four-lane Divided	646+30.000	647+00.000	70.00	0.0133	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	11.50	Non-Traversable Median	11.50	false	false		
34	Rural Multi-Lane Segment Four-lane Divided	647+00.000	647+26.050	26.05	0.0049	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	16.30	Non-Traversable Median	16.30	false	false		
35	Rural Multi-Lane Segment Four-lane Divided	647+26.050	647+50.000	23.95	0.0045	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	18.80	Non-Traversable Median	18.80	false	false		
36	Rural Multi-Lane Segment Four-lane Divided	647+50.000	648+00.000	50.00	0.0095	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
37	Rural Multi-Lane Segment Four-lane Divided	648+00.000	648+42.000	42.00	0.0080	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	17.48	Non-Traversable Median	17.48	false	false		
38	Rural Multi-Lane Segment Four-lane Divided	648+42.000	649+00.000	58.00	0.0110	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	11.48	Non-Traversable Median	11.48	false	false		
39	Rural Multi-Lane Segment Four-lane Divided	649+00.000	649+20.000	20.00	0.0038	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
40	Rural Multi-Lane Segment Four-lane Divided	649+20.000	655+50.000	630.00	0.1193	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
41	Rural Multi-Lane Segment Four-lane Divided	655+50.000	655+70.000	20.00	0.0038	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
42	Rural Multi-Lane Segment Four-lane Undivided	655+70.000	656+50.000	80.00	0.0152	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
43	Rural Multi-Lane Segment Four-lane Divided	656+50.000	667+80.000	1,130.00	0.2140	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
44	Rural Multi-Lane Segment Four-lane Divided	667+80.000	668+50.000	70.00	0.0133	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	0.00	20.00	Non-Traversable Median	20.00	false	false		

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
45	Rural Multi-Lane Segment Four-lane Divided	668+50.000	668+80.000	30.00	0.0057	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	0.00	18.62	Non-Traversable Median	18.62	false	false		
46	Rural Multi-Lane Segment Four-lane Divided	668+80.000	669+05.000	25.00	0.0047	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	16.08	Non-Traversable Median	16.08	false	false		
47	Rural Multi-Lane Segment Four-lane Divided	669+05.000	669+80.000	75.00	0.0142	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	11.46	Non-Traversable Median	11.46	false	false		
48	Rural Multi-Lane Segment Four-lane Divided	669+80.000	672+86.110	306.11	0.0580	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
49	Rural Multi-Lane Segment Four-lane Divided	672+86.110	675+50.000	263.89	0.0500	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
50	Rural Multi-Lane Segment Four-lane Divided	675+50.000	676+00.000	50.00	0.0095	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	8.00	Traversable Median	8.00	false	false		
51	Rural Multi-Lane Segment Four-lane Divided	676+00.000	676+30.000	30.00	0.0057	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	0.00	8.00	8.00	Traversable Median	8.00	false	false		
52	Rural Multi-Lane Segment Four-lane Undivided	676+30.000	677+50.000	120.00	0.0227	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	0.00	8.00	0.00	None	0.00	false	false	0:1	0:1
53	Rural Multi-Lane Segment Four-lane Divided	677+50.000	679+00.000	150.00	0.0284	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
54	Rural Multi-Lane Segment Four-lane Divided	679+00.000	680+20.000	120.00	0.0227	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
55	Rural Multi-Lane Segment Four-lane Divided	680+20.000	680+80.000	60.00	0.0114	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
56	Rural Multi-Lane Segment Four-lane Divided	680+80.000	681+00.000	20.00	0.0038	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	0.00	8.00	8.00	Traversable Median	20.00	false	false		
57	Rural Multi-Lane Segment Four-lane Undivided	681+00.000	682+20.000	120.00	0.0227	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	0.00	8.00	0.00	None	0.00	false	false	0:1	0:1
58	Rural Multi-Lane Segment Four-lane Divided	682+20.000	683+82.710	162.71	0.0308	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
59	Rural Multi-Lane Segment Four-lane Divided	683+82.710	690+00.000	617.29	0.1169	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
60	Rural Multi-Lane Segment Four-lane Divided	690+00.000	691+50.000	150.00	0.0284	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	0.00	20.00	Non-Traversable Median	20.00	false	false		
61	Rural Multi-Lane Segment Four-lane Divided	691+50.000	692+01.000	51.00	0.0097	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	0.00	17.45	Non-Traversable Median	17.45	false	false		
62	Rural Multi-Lane Segment Four-lane Divided	692+01.000	692+70.000	69.00	0.0131	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	0.00	11.45	Non-Traversable Median	11.45	false	false		
63	Rural Multi-Lane Segment Four-lane Divided	692+70.000	693+85.010	115.01	0.0218	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	0.00	8.00	Non-Traversable Median	19.00	false	false		
64	Rural Multi-Lane Segment Four-lane Divided	693+85.010	698+50.000	464.99	0.0881	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	0.00	8.00	Non-Traversable Median	19.00	false	false		
65	Rural Multi-Lane Segment Four-lane Divided	698+50.000	698+70.000	20.00	0.0038	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	0.00	8.00	Traversable Median	19.00	false	false		
66	Rural Multi-Lane Segment Four-lane Divided	698+70.000	699+20.000	50.00	0.0095	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	0.00	0.00	8.00	Traversable Median	19.00	false	false		
67	Rural Multi-Lane Segment Four-lane Undivided	699+20.000	700+40.000	120.00	0.0227	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
68	Rural Multi-Lane Segment Four-lane Divided	700+40.000	700+50.000	10.00	0.0019	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	0.00	0.00	8.00	Traversable Median	8.00	false	false		
69	Rural Multi-Lane Segment Four-lane Divided	700+50.000	701+10.000	60.00	0.0114	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	0.00	8.00	Traversable Median	8.00	false	false		
70	Rural Multi-Lane Segment Four-lane Divided	701+10.000	702+00.000	90.00	0.0170	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	12.00	12.00	8.00	0.00	8.00	Non-Traversable Median	8.00	false	false		
71	Rural Multi-Lane Segment Four-lane Divided	702+00.000	702+50.000	50.00	0.0095	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	0.00	8.00	Non-Traversable Median	8.00	false	false		
72	Rural Multi-Lane Segment Four-lane Divided	702+50.000	707+00.000	450.00	0.0852	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
73	Rural Multi-Lane Segment Four-lane Divided	707+00.000	708+00.000	100.00	0.0189	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
74	Rural Multi-Lane Segment Four-lane Divided	708+00.000	708+80.000	80.00	0.0152	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
75	Rural Multi-Lane Segment Four-lane Divided	708+80.000	709+00.000	20.00	0.0038	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
76	Rural Multi-Lane Segment Four-lane Undivided	709+00.000	710+30.000	130.00	0.0246	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
77	Rural Multi-Lane Segment Four-lane Divided	710+30.000	710+47.850	17.85	0.0034	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
78	Rural Multi-Lane Segment Four-lane Divided	710+47.850	725+00.000	1,452.15	0.2750	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
79	Rural Multi-Lane Segment Four-lane Divided	725+00.000	727+52.350	252.35	0.0478	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
80	Rural Multi-Lane Segment Four-lane Divided	727+52.350	735+00.000	747.65	0.1416	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
81	Rural Multi-Lane Segment Four-lane Divided	735+00.000	755+50.000	2,050.00	0.3883	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
82	Rural Multi-Lane Segment Four-lane Undivided	755+50.000	756+90.000	140.00	0.0265	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
83	Rural Multi-Lane Segment Four-lane Divided	756+90.000	757+00.000	10.00	0.0019	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
84	Rural Multi-Lane Segment Four-lane Divided	757+00.000	763+30.000	630.00	0.1193	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
85	Rural Multi-Lane Segment Four-lane Divided	763+30.000	764+00.000	70.00	0.0133	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	11.50	Non-Traversable Median	11.50	false	false		
86	Rural Multi-Lane Segment Four-lane Divided	764+00.000	764+50.000	50.00	0.0095	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	17.50	Non-Traversable Median	17.50	false	false		
87	Rural Multi-Lane Segment Four-lane Divided	764+50.000	765+52.550	102.55	0.0194	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
88	Rural Multi-Lane Segment Four-lane Divided	765+52.550	777+80.000	1,227.45	0.2325	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
89	Rural Multi-Lane Segment Four-lane Undivided	777+80.000	778+80.000	100.00	0.0189	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
90	Rural Multi-Lane Segment Four-lane Divided	778+80.000	779+00.000	20.00	0.0038	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
91	Rural Multi-Lane Segment Four-lane Divided	779+00.000	780+45.930	145.93	0.0276	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
92	Rural Multi-Lane Segment Four-lane Divided	780+45.930	785+40.000	494.07	0.0936	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
93	Rural Multi-Lane Segment Four-lane Divided	785+40.000	785+50.000	10.00	0.0019	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
94	Rural Multi-Lane Segment Four-lane Divided	785+50.000	786+09.000	59.00	0.0112	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	11.54	Non-Traversable Median	11.54	false	false		
95	Rural Multi-Lane Segment Four-lane Divided	786+09.000	786+50.000	41.00	0.0078	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	17.54	Non-Traversable Median	17.54	false	false		
96	Rural Multi-Lane Segment Four-lane Divided	786+50.000	801+10.000	1,460.00	0.2765	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
97	Rural Multi-Lane Segment Four-lane Divided	801+10.000	801+61.000	51.00	0.0097	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	17.45	Non-Traversable Median	17.45	false	false		
98	Rural Multi-Lane Segment Four-lane Divided	801+61.000	802+30.000	69.00	0.0131	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	11.45	Non-Traversable Median	11.45	false	false		
99	Rural Multi-Lane Segment Four-lane Divided	802+30.000	802+40.000	10.00	0.0019	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
100	Rural Multi-Lane Segment Four-lane Divided	802+40.000	808+30.000	590.00	0.1117	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
101	Rural Multi-Lane Segment Four-lane Divided	808+30.000	808+80.000	50.00	0.0095	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
102	Rural Multi-Lane Segment Four-lane Undivided	808+80.000	809+00.000	20.00	0.0038	2025: 5,804; 2026: 6,105; 2027: 6,407; 2028: 6,708; 2029: 7,010; 2030: 7,134; 2031: 7,259; 2032: 7,383; 2033: 7,508; 2034: 7,632; 2035: 7,757; 2036: 7,881; 2037: 8,006; 2038: 8,130; 2039: 8,255; 2040: 8,380; 2041: 8,528; 2042: 8,676; 2043: 8,824; 2044: 8,972; 2045: 9,120; 2046: 9,268; 2047: 9,416; 2048: 9,564; 2049: 9,712; 2050: 9,860	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
103	Rural Multi-Lane Segment Four-lane Undivided	809+00.000	809+60.000	60.00	0.0114	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
104	Rural Multi-Lane Segment Four-lane Divided	809+60.000	810+00.000	40.00	0.0076	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	0.00	0.00	8.00	Traversable Median	20.00	false	false		

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
105	Rural Multi-Lane Segment Four-lane Divided	810+00.000	810+20.000	20.00	0.0038	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
106	Rural Multi-Lane Segment Four-lane Divided	810+20.000	816+00.000	580.00	0.1098	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
107	Rural Multi-Lane Segment Four-lane Divided	816+00.000	816+70.000	70.00	0.0133	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	11.50	Non-Traversable Median	11.50	false	false		
108	Rural Multi-Lane Segment Four-lane Divided	816+70.000	817+20.000	50.00	0.0095	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	17.50	Non-Traversable Median	17.50	false	false		
109	Rural Multi-Lane Segment Four-lane Divided	817+20.000	853+70.000	3,650.00	0.6913	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
110	Rural Multi-Lane Segment Four-lane Divided	853+70.000	854+00.000	30.00	0.0057	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	18.36	Non-Traversable Median	18.36	false	false		
111	Rural Multi-Lane Segment Four-lane Divided	854+00.000	854+16.000	16.00	0.0030	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	15.85	Non-Traversable Median	15.85	false	false		
112	Rural Multi-Lane Segment Four-lane Divided	854+16.000	854+80.000	64.00	0.0121	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	11.49	Non-Traversable Median	11.49	false	false		
113	Rural Multi-Lane Segment Four-lane Divided	854+80.000	860+90.000	610.00	0.1155	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
114	Rural Multi-Lane Segment Four-lane Divided	860+90.000	861+85.000	95.00	0.0180	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
115	Rural Multi-Lane Segment Four-lane Undivided	861+85.000	862+00.000	15.00	0.0028	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	12.00	12.00	8.00	0.00	0.00	None	0.00	false	false	0:1	0:1
116	Rural Multi-Lane Segment Four-lane Undivided	862+00.000	862+50.000	50.00	0.0095	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	0.00	0.00	None	0.00	false	false	0:1	0:1
117	Rural Multi-Lane Segment Four-lane Undivided	862+50.000	862+60.000	10.00	0.0019	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
118	Rural Multi-Lane Segment Four-lane Divided	862+60.000	863+10.000	50.00	0.0095	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	8.00	Traversable Median	19.00	false	false		
119	Rural Multi-Lane Segment Four-lane Divided	863+10.000	869+00.000	590.00	0.1117	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	19.00	false	false		

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
120	Rural Multi-Lane Segment Four-lane Divided	869+00.000	869+70.000	70.00	0.0133	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	11.50	Non-Traversable Median	11.50	false	false		
121	Rural Multi-Lane Segment Four-lane Divided	869+70.000	870+20.000	50.00	0.0095	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	17.50	Non-Traversable Median	17.50	false	false		
122	Rural Multi-Lane Segment Four-lane Divided	870+20.000	881+80.000	1,160.00	0.2197	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
123	Rural Multi-Lane Segment Four-lane Divided	881+80.000	882+31.000	51.00	0.0097	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	17.45	Non-Traversable Median	17.45	false	false		
124	Rural Multi-Lane Segment Four-lane Divided	882+31.000	883+00.000	69.00	0.0131	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	11.45	Non-Traversable Median	11.45	false	false		
125	Rural Multi-Lane Segment Four-lane Divided	883+00.000	887+90.000	490.00	0.0928	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
126	Rural Multi-Lane Segment Four-lane Divided	887+90.000	888+20.000	30.00	0.0057	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
127	Rural Multi-Lane Segment Four-lane Undivided	888+20.000	889+30.000	110.00	0.0208	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
128	Rural Multi-Lane Segment Four-lane Divided	889+30.000	889+50.000	20.00	0.0038	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
129	Rural Multi-Lane Segment Four-lane Divided	889+50.000	894+50.000	500.00	0.0947	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
130	Rural Multi-Lane Segment Four-lane Divided	894+50.000	895+15.000	65.00	0.0123	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	11.55	Non-Traversable Median	11.55	false	false		
131	Rural Multi-Lane Segment Four-lane Divided	895+15.000	895+60.000	45.00	0.0085	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	17.55	Non-Traversable Median	17.55	false	false		
132	Rural Multi-Lane Segment Four-lane Divided	895+60.000	898+00.000	240.00	0.0455	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
133	Rural Multi-Lane Segment Four-lane Divided	898+00.000	906+70.000	870.00	0.1648	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
134	Rural Multi-Lane Segment Four-lane Divided	906+70.000	907+21.000	51.00	0.0097	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	17.45	Non-Traversable Median	17.45	false	false		

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
135	Rural Multi-Lane Segment Four-lane Divided	907+21.000	907+80.000	59.00	0.0112	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	11.95	Non-Traversable Median	11.95	false	false		
136	Rural Multi-Lane Segment Four-lane Divided	907+80.000	907+90.000	10.00	0.0019	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	8.50	Non-Traversable Median	19.50	false	false		
137	Rural Multi-Lane Segment Four-lane Divided	907+90.000	913+70.000	580.00	0.1098	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	19.00	false	false		
138	Rural Multi-Lane Segment Four-lane Divided	913+70.000	914+00.000	30.00	0.0057	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	12.00	12.00	8.00	8.00	8.00	Traversable Median	19.00	false	false		
139	Rural Multi-Lane Segment Four-lane Divided	914+00.000	914+30.000	30.00	0.0057	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	12.00	12.00	8.00	8.00	8.00	Traversable Median	19.00	false	false		
140	Rural Multi-Lane Segment Four-lane Undivided	914+30.000	914+40.000	10.00	0.0019	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
141	Rural Multi-Lane Segment Four-lane Undivided	914+40.000	915+40.000	100.00	0.0189	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
142	Rural Multi-Lane Segment Four-lane Divided	915+40.000	916+00.000	60.00	0.0114	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	12.00	12.00	8.00	8.00	8.00	Traversable Median	19.00	false	false		
143	Rural Multi-Lane Segment Four-lane Divided	916+00.000	921+00.000	500.00	0.0947	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	19.00	false	false		
144	Rural Multi-Lane Segment Four-lane Divided	921+00.000	921+90.000	90.00	0.0170	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	19.00	false	false		
145	Rural Multi-Lane Segment Four-lane Divided	921+90.000	922+00.000	10.00	0.0019	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
146	Rural Multi-Lane Segment Four-lane Divided	922+00.000	922+59.000	59.00	0.0112	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	12.00	12.00	8.00	8.00	11.54	Non-Traversable Median	11.54	false	false		
147	Rural Multi-Lane Segment Four-lane Divided	922+59.000	923+00.000	41.00	0.0078	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	12.00	12.00	8.00	8.00	17.54	Non-Traversable Median	17.54	false	false		
148	Rural Multi-Lane Segment Four-lane Divided	923+00.000	941+70.000	1,870.00	0.3542	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
149	Rural Multi-Lane Segment Four-lane Divided	941+70.000	948+50.000	680.00	0.1288	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		

Table 3. Crash History Highway - Homogeneous Segments (Section 3)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
1	Rural Multi-Lane Segment Four-lane Divided	585+00.000	586+00.000	100.00	0.0189	2018-2022: 4,325	12.00	12.00	8.00	8.00	8.40	Non-Traversable Median	8.40	false	false		
2	Rural Multi-Lane Segment Four-lane Divided	586+00.000	593+75.000	775.00	0.1468	2018-2022: 4,325	12.00	12.00	8.00	8.00	11.90	Non-Traversable Median	11.90	false	false		
3	Rural Multi-Lane Segment Four-lane Divided	593+75.000	594+84.940	109.94	0.0208	2018-2022: 4,325	12.00	12.00	8.00	8.00	15.44	Non-Traversable Median	15.44	false	false		
4	Rural Multi-Lane Segment Four-lane Divided	594+84.940	600+00.000	515.06	0.0975	2018-2022: 4,325	12.00	12.00	8.00	8.00	17.94	Non-Traversable Median	17.94	false	false		
5	Rural Multi-Lane Segment Four-lane Divided	600+00.000	600+42.000	42.00	0.0080	2018-2022: 4,325	12.00	12.00	8.00	8.00	17.48	Non-Traversable Median	17.48	false	false		
6	Rural Multi-Lane Segment Four-lane Divided	600+42.000	601+00.000	58.00	0.0110	2018-2022: 4,325	12.00	12.00	8.00	8.00	11.48	Non-Traversable Median	11.48	false	false		
7	Rural Multi-Lane Segment Four-lane Divided	601+00.000	602+00.000	100.00	0.0189	2018-2022: 4,325	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
8	Rural Multi-Lane Segment Four-lane Divided	602+00.000	605+00.000	300.00	0.0568	2018-2022: 4,325	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
9	Rural Multi-Lane Segment Four-lane Divided	605+00.000	605+10.000	10.00	0.0019	2018-2022: 4,325	12.00	12.00	8.00	0.00	8.00	Non-Traversable Median	20.00	false	false		
10	Rural Multi-Lane Segment Four-lane Divided	605+10.000	605+40.000	30.00	0.0057	2018-2022: 4,325	12.00	12.00	8.00	0.00	8.00	Traversable Median	20.00	false	false		
11	Rural Multi-Lane Segment Four-lane Undivided	605+40.000	605+60.000	20.00	0.0038	2018-2022: 4,325	12.00	12.00	8.00	0.00	0.00	None	0.00	false	false	0:1	0:1
12	Rural Multi-Lane Segment Four-lane Undivided	605+60.000	605+70.000	10.00	0.0019	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
13	Rural Multi-Lane Segment Four-lane Undivided	605+70.000	605+75.000	5.00	0.0009	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
14	Rural Multi-Lane Segment Four-lane Undivided	605+75.000	606+00.000	25.00	0.0047	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
15	Rural Multi-Lane Segment Four-lane Divided	606+00.000	607+50.000	150.00	0.0284	2018-2022: 4,325	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
16	Rural Multi-Lane Segment Four-lane Divided	607+50.000	609+00.000	150.00	0.0284	2018-2022: 4,325	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
17	Rural Multi-Lane Segment Four-lane Divided	609+00.000	609+21.930	21.93	0.0042	2018-2022: 4,325	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
18	Rural Multi-Lane Segment Four-lane Divided	609+21.930	611+40.000	218.07	0.0413	2018-2022: 4,325	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
19	Rural Multi-Lane Segment Four-lane Divided	611+40.000	611+50.000	10.00	0.0019	2018-2022: 4,325	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
20	Rural Multi-Lane Segment Four-lane Divided	611+50.000	612+09.000	59.00	0.0112	2018-2022: 4,325	12.00	12.00	8.00	8.00	11.54	Non-Traversable Median	11.54	false	false		
21	Rural Multi-Lane Segment Four-lane Divided	612+09.000	612+50.000	41.00	0.0078	2018-2022: 4,325	12.00	12.00	8.00	8.00	17.54	Non-Traversable Median	17.54	false	false		
22	Rural Multi-Lane Segment Four-lane Divided	612+50.000	624+64.530	1,214.53	0.2300	2018-2022: 4,325	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
23	Rural Multi-Lane Segment Four-lane Divided	624+64.530	631+30.000	665.47	0.1260	2018-2022: 4,325	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
24	Rural Multi-Lane Segment Four-lane Divided	631+30.000	631+81.000	51.00	0.0097	2018-2022: 4,325	12.00	12.00	8.00	8.00	17.45	Non-Traversable Median	17.45	false	false		
25	Rural Multi-Lane Segment Four-lane Divided	631+81.000	632+50.000	69.00	0.0131	2018-2022: 4,325	12.00	12.00	8.00	8.00	11.45	Non-Traversable Median	11.45	false	false		
26	Rural Multi-Lane Segment Four-lane Divided	632+50.000	636+92.820	442.82	0.0839	2018-2022: 4,325	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
27	Rural Multi-Lane Segment Four-lane Divided	636+92.820	638+80.000	187.18	0.0355	2018-2022: 4,325	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
28	Rural Multi-Lane Segment Four-lane Divided	638+80.000	639+00.000	20.00	0.0038	2018-2022: 4,325	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
29	Rural Multi-Lane Segment Four-lane Undivided	639+00.000	640+00.000	100.00	0.0189	2018-2022: 4,325	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
30	Rural Multi-Lane Segment Four-lane Divided	640+00.000	640+20.000	20.00	0.0038	2018-2022: 4,325	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
31	Rural Multi-Lane Segment Four-lane Divided	640+20.000	645+50.000	530.00	0.1004	2018-2022: 4,325	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
32	Rural Multi-Lane Segment Four-lane Divided	645+50.000	646+30.000	80.00	0.0152	2018-2022: 4,325	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
33	Rural Multi-Lane Segment Four-lane Divided	646+30.000	647+00.000	70.00	0.0133	2018-2022: 4,325	12.00	12.00	8.00	8.00	11.50	Non-Traversable Median	11.50	false	false		
34	Rural Multi-Lane Segment Four-lane Divided	647+00.000	647+26.050	26.05	0.0049	2018-2022: 4,325	12.00	12.00	8.00	8.00	16.30	Non-Traversable Median	16.30	false	false		
35	Rural Multi-Lane Segment Four-lane Divided	647+26.050	647+50.000	23.95	0.0045	2018-2022: 4,325	12.00	12.00	8.00	8.00	18.80	Non-Traversable Median	18.80	false	false		
36	Rural Multi-Lane Segment Four-lane Divided	647+50.000	648+00.000	50.00	0.0095	2018-2022: 4,325	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
37	Rural Multi-Lane Segment Four-lane Divided	648+00.000	648+42.000	42.00	0.0080	2018-2022: 4,325	12.00	12.00	8.00	8.00	17.48	Non-Traversable Median	17.48	false	false		
38	Rural Multi-Lane Segment Four-lane Divided	648+42.000	649+00.000	58.00	0.0110	2018-2022: 4,325	12.00	12.00	8.00	8.00	11.48	Non-Traversable Median	11.48	false	false		
39	Rural Multi-Lane Segment Four-lane Divided	649+00.000	649+20.000	20.00	0.0038	2018-2022: 4,325	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
40	Rural Multi-Lane Segment Four-lane Divided	649+20.000	655+50.000	630.00	0.1193	2018-2022: 4,325	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
41	Rural Multi-Lane Segment Four-lane Divided	655+50.000	655+70.000	20.00	0.0038	2018-2022: 4,325	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
42	Rural Multi-Lane Segment Four-lane Undivided	655+70.000	656+50.000	80.00	0.0152	2018-2022: 4,325	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
43	Rural Multi-Lane Segment Four-lane Divided	656+50.000	667+80.000	1,130.00	0.2140	2018-2022: 4,325	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
44	Rural Multi-Lane Segment Four-lane Divided	667+80.000	668+50.000	70.00	0.0133	2018-2022: 4,325	12.00	12.00	8.00	0.00	20.00	Non-Traversable Median	20.00	false	false		
45	Rural Multi-Lane Segment Four-lane Divided	668+50.000	668+80.000	30.00	0.0057	2018-2022: 4,325	12.00	12.00	8.00	0.00	18.62	Non-Traversable Median	18.62	false	false		
46	Rural Multi-Lane Segment Four-lane Divided	668+80.000	669+05.000	25.00	0.0047	2018-2022: 4,325	12.00	12.00	8.00	8.00	16.08	Non-Traversable Median	16.08	false	false		
47	Rural Multi-Lane Segment Four-lane Divided	669+05.000	669+80.000	75.00	0.0142	2018-2022: 4,325	12.00	12.00	8.00	8.00	11.46	Non-Traversable Median	11.46	false	false		
48	Rural Multi-Lane Segment Four-lane Divided	669+80.000	672+86.110	306.11	0.0580	2018-2022: 4,325	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
49	Rural Multi-Lane Segment Four-lane Divided	672+86.110	675+50.000	263.89	0.0500	2018-2022: 4,325	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
50	Rural Multi-Lane Segment Four-lane Divided	675+50.000	676+00.000	50.00	0.0095	2018-2022: 4,325	12.00	12.00	8.00	8.00	8.00	Traversable Median	8.00	false	false		
51	Rural Multi-Lane Segment Four-lane Divided	676+00.000	676+30.000	30.00	0.0057	2018-2022: 4,325	12.00	12.00	0.00	8.00	8.00	Traversable Median	8.00	false	false		
52	Rural Multi-Lane Segment Four-lane Undivided	676+30.000	677+50.000	120.00	0.0227	2018-2022: 4,325	12.00	12.00	0.00	8.00	0.00	None	0.00	false	false	0:1	0:1
53	Rural Multi-Lane Segment Four-lane Divided	677+50.000	679+00.000	150.00	0.0284	2018-2022: 4,325	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
54	Rural Multi-Lane Segment Four-lane Divided	679+00.000	680+20.000	120.00	0.0227	2018-2022: 4,150	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
55	Rural Multi-Lane Segment Four-lane Divided	680+20.000	680+80.000	60.00	0.0114	2018-2022: 4,150	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
56	Rural Multi-Lane Segment Four-lane Divided	680+80.000	681+00.000	20.00	0.0038	2018-2022: 4,150	12.00	12.00	0.00	8.00	8.00	Traversable Median	20.00	false	false		
57	Rural Multi-Lane Segment Four-lane Undivided	681+00.000	682+20.000	120.00	0.0227	2018-2022: 4,150	12.00	12.00	0.00	8.00	0.00	None	0.00	false	false	0:1	0:1
58	Rural Multi-Lane Segment Four-lane Divided	682+20.000	683+82.710	162.71	0.0308	2018-2022: 4,150	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
59	Rural Multi-Lane Segment Four-lane Divided	683+82.710	690+00.000	617.29	0.1169	2018-2022: 4,150	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
60	Rural Multi-Lane Segment Four-lane Divided	690+00.000	691+50.000	150.00	0.0284	2018-2022: 4,150	12.00	12.00	8.00	0.00	20.00	Non-Traversable Median	20.00	false	false		
61	Rural Multi-Lane Segment Four-lane Divided	691+50.000	692+01.000	51.00	0.0097	2018-2022: 4,150	12.00	12.00	8.00	0.00	17.45	Non-Traversable Median	17.45	false	false		
62	Rural Multi-Lane Segment Four-lane Divided	692+01.000	692+70.000	69.00	0.0131	2018-2022: 4,150	12.00	12.00	8.00	0.00	11.45	Non-Traversable Median	11.45	false	false		
63	Rural Multi-Lane Segment Four-lane Divided	692+70.000	693+85.010	115.01	0.0218	2018-2022: 4,150	12.00	12.00	8.00	0.00	8.00	Non-Traversable Median	19.00	false	false		
64	Rural Multi-Lane Segment Four-lane Divided	693+85.010	698+50.000	464.99	0.0881	2018-2022: 4,150	12.00	12.00	8.00	0.00	8.00	Non-Traversable Median	19.00	false	false		
65	Rural Multi-Lane Segment Four-lane Divided	698+50.000	698+70.000	20.00	0.0038	2018-2022: 4,150	12.00	12.00	8.00	0.00	8.00	Traversable Median	19.00	false	false		
66	Rural Multi-Lane Segment Four-lane Divided	698+70.000	699+20.000	50.00	0.0095	2018-2022: 4,150	12.00	12.00	0.00	0.00	8.00	Traversable Median	19.00	false	false		
67	Rural Multi-Lane Segment Four-lane Undivided	699+20.000	700+40.000	120.00	0.0227	2018-2022: 4,150	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
68	Rural Multi-Lane Segment Four-lane Divided	700+40.000	700+50.000	10.00	0.0019	2018-2022: 4,150	12.00	12.00	0.00	0.00	8.00	Traversable Median	8.00	false	false		
69	Rural Multi-Lane Segment Four-lane Divided	700+50.000	701+10.000	60.00	0.0114	2018-2022: 4,150	12.00	12.00	8.00	0.00	8.00	Traversable Median	8.00	false	false		
70	Rural Multi-Lane Segment Four-lane Divided	701+10.000	702+00.000	90.00	0.0170	2018-2022: 4,150	12.00	12.00	8.00	0.00	8.00	Non-Traversable Median	8.00	false	false		
71	Rural Multi-Lane Segment Four-lane Divided	702+00.000	702+50.000	50.00	0.0095	2018-2022: 4,900	12.00	12.00	8.00	0.00	8.00	Non-Traversable Median	8.00	false	false		
72	Rural Multi-Lane Segment Four-lane Divided	702+50.000	707+00.000	450.00	0.0852	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
73	Rural Multi-Lane Segment Four-lane Divided	707+00.000	708+00.000	100.00	0.0189	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
74	Rural Multi-Lane Segment Four-lane Divided	708+00.000	708+80.000	80.00	0.0152	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
75	Rural Multi-Lane Segment Four-lane Divided	708+80.000	709+00.000	20.00	0.0038	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
76	Rural Multi-Lane Segment Four-lane Undivided	709+00.000	710+30.000	130.00	0.0246	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
77	Rural Multi-Lane Segment Four-lane Divided	710+30.000	710+47.850	17.85	0.0034	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
78	Rural Multi-Lane Segment Four-lane Divided	710+47.850	725+00.000	1,452.15	0.2750	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
79	Rural Multi-Lane Segment Four-lane Divided	725+00.000	727+52.350	252.35	0.0478	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
80	Rural Multi-Lane Segment Four-lane Divided	727+52.350	735+00.000	747.65	0.1416	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
81	Rural Multi-Lane Segment Four-lane Divided	735+00.000	755+50.000	2,050.00	0.3883	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
82	Rural Multi-Lane Segment Four-lane Undivided	755+50.000	756+90.000	140.00	0.0265	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
83	Rural Multi-Lane Segment Four-lane Divided	756+90.000	757+00.000	10.00	0.0019	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
84	Rural Multi-Lane Segment Four-lane Divided	757+00.000	763+30.000	630.00	0.1193	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
85	Rural Multi-Lane Segment Four-lane Divided	763+30.000	764+00.000	70.00	0.0133	2018-2022: 4,900	12.00	12.00	8.00	8.00	11.50	Non-Traversable Median	11.50	false	false		
86	Rural Multi-Lane Segment Four-lane Divided	764+00.000	764+50.000	50.00	0.0095	2018-2022: 4,900	12.00	12.00	8.00	8.00	17.50	Non-Traversable Median	17.50	false	false		
87	Rural Multi-Lane Segment Four-lane Divided	764+50.000	765+52.550	102.55	0.0194	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
88	Rural Multi-Lane Segment Four-lane Divided	765+52.550	777+80.000	1,227.45	0.2325	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
89	Rural Multi-Lane Segment Four-lane Undivided	777+80.000	778+80.000	100.00	0.0189	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
90	Rural Multi-Lane Segment Four-lane Divided	778+80.000	779+00.000	20.00	0.0038	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
91	Rural Multi-Lane Segment Four-lane Divided	779+00.000	780+45.930	145.93	0.0276	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
92	Rural Multi-Lane Segment Four-lane Divided	780+45.930	785+40.000	494.07	0.0936	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
93	Rural Multi-Lane Segment Four-lane Divided	785+40.000	785+50.000	10.00	0.0019	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
94	Rural Multi-Lane Segment Four-lane Divided	785+50.000	786+09.000	59.00	0.0112	2018-2022: 4,900	12.00	12.00	8.00	8.00	11.54	Non-Traversable Median	11.54	false	false		
95	Rural Multi-Lane Segment Four-lane Divided	786+09.000	786+50.000	41.00	0.0078	2018-2022: 4,900	12.00	12.00	8.00	8.00	17.54	Non-Traversable Median	17.54	false	false		
96	Rural Multi-Lane Segment Four-lane Divided	786+50.000	801+10.000	1,460.00	0.2765	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
97	Rural Multi-Lane Segment Four-lane Divided	801+10.000	801+61.000	51.00	0.0097	2018-2022: 4,900	12.00	12.00	8.00	8.00	17.45	Non-Traversable Median	17.45	false	false		
98	Rural Multi-Lane Segment Four-lane Divided	801+61.000	802+30.000	69.00	0.0131	2018-2022: 4,900	12.00	12.00	8.00	8.00	11.45	Non-Traversable Median	11.45	false	false		
99	Rural Multi-Lane Segment Four-lane Divided	802+30.000	802+40.000	10.00	0.0019	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
100	Rural Multi-Lane Segment Four-lane Divided	802+40.000	808+30.000	590.00	0.1117	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
101	Rural Multi-Lane Segment Four-lane Divided	808+30.000	808+80.000	50.00	0.0095	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
102	Rural Multi-Lane Segment Four-lane Undivided	808+80.000	809+00.000	20.00	0.0038	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
103	Rural Multi-Lane Segment Four-lane Undivided	809+00.000	809+60.000	60.00	0.0114	2018-2022: 4,900	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
104	Rural Multi-Lane Segment Four-lane Divided	809+60.000	810+00.000	40.00	0.0076	2018-2022: 4,900	12.00	12.00	0.00	0.00	8.00	Traversable Median	20.00	false	false		
105	Rural Multi-Lane Segment Four-lane Divided	810+00.000	810+20.000	20.00	0.0038	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
106	Rural Multi-Lane Segment Four-lane Divided	810+20.000	816+00.000	580.00	0.1098	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
107	Rural Multi-Lane Segment Four-lane Divided	816+00.000	816+70.000	70.00	0.0133	2018-2022: 4,900	12.00	12.00	8.00	8.00	11.50	Non-Traversable Median	11.50	false	false		
108	Rural Multi-Lane Segment Four-lane Divided	816+70.000	817+20.000	50.00	0.0095	2018-2022: 4,900	12.00	12.00	8.00	8.00	17.50	Non-Traversable Median	17.50	false	false		
109	Rural Multi-Lane Segment Four-lane Divided	817+20.000	853+70.000	3,650.00	0.6913	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
110	Rural Multi-Lane Segment Four-lane Divided	853+70.000	854+00.000	30.00	0.0057	2018-2022: 4,900	12.00	12.00	8.00	8.00	18.36	Non-Traversable Median	18.36	false	false		
111	Rural Multi-Lane Segment Four-lane Divided	854+00.000	854+16.000	16.00	0.0030	2018-2022: 4,900	12.00	12.00	8.00	8.00	15.85	Non-Traversable Median	15.85	false	false		
112	Rural Multi-Lane Segment Four-lane Divided	854+16.000	854+80.000	64.00	0.0121	2018-2022: 4,900	12.00	12.00	8.00	8.00	11.49	Non-Traversable Median	11.49	false	false		
113	Rural Multi-Lane Segment Four-lane Divided	854+80.000	860+90.000	610.00	0.1155	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
114	Rural Multi-Lane Segment Four-lane Divided	860+90.000	861+85.000	95.00	0.0180	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
115	Rural Multi-Lane Segment Four-lane Undivided	861+85.000	862+00.000	15.00	0.0028	2018-2022: 4,900	12.00	12.00	8.00	0.00	0.00	None	0.00	false	false	0:1	0:1
116	Rural Multi-Lane Segment Four-lane Undivided	862+00.000	862+50.000	50.00	0.0095	2018-2022: 4,900	12.00	12.00	8.00	0.00	0.00	None	0.00	false	false	0:1	0:1
117	Rural Multi-Lane Segment Four-lane Undivided	862+50.000	862+60.000	10.00	0.0019	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
118	Rural Multi-Lane Segment Four-lane Divided	862+60.000	863+10.000	50.00	0.0095	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Traversable Median	19.00	false	false		
119	Rural Multi-Lane Segment Four-lane Divided	863+10.000	869+00.000	590.00	0.1117	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	19.00	false	false		
120	Rural Multi-Lane Segment Four-lane Divided	869+00.000	869+70.000	70.00	0.0133	2018-2022: 4,900	12.00	12.00	8.00	8.00	11.50	Non-Traversable Median	11.50	false	false		
121	Rural Multi-Lane Segment Four-lane Divided	869+70.000	870+20.000	50.00	0.0095	2018-2022: 4,900	12.00	12.00	8.00	8.00	17.50	Non-Traversable Median	17.50	false	false		
122	Rural Multi-Lane Segment Four-lane Divided	870+20.000	881+80.000	1,160.00	0.2197	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
123	Rural Multi-Lane Segment Four-lane Divided	881+80.000	882+31.000	51.00	0.0097	2018-2022: 4,900	12.00	12.00	8.00	8.00	17.45	Non-Traversable Median	17.45	false	false		
124	Rural Multi-Lane Segment Four-lane Divided	882+31.000	883+00.000	69.00	0.0131	2018-2022: 4,900	12.00	12.00	8.00	8.00	11.45	Non-Traversable Median	11.45	false	false		
125	Rural Multi-Lane Segment Four-lane Divided	883+00.000	887+90.000	490.00	0.0928	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
126	Rural Multi-Lane Segment Four-lane Divided	887+90.000	888+20.000	30.00	0.0057	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Left Lane Width (ft)	Right Lane Width (ft)	Left Shoulder Width (ft)	Right Shoulder Width (ft)	Median Width (ft)	Median Type	Effective Median Width (ft)	Lighting	Automated Speed Enforcement	Left Side Slope	Right Side Slope
127	Rural Multi-Lane Segment Four-lane Undivided	888+20.000	889+30.000	110.00	0.0208	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
128	Rural Multi-Lane Segment Four-lane Divided	889+30.000	889+50.000	20.00	0.0038	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Traversable Median	20.00	false	false		
129	Rural Multi-Lane Segment Four-lane Divided	889+50.000	894+50.000	500.00	0.0947	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	20.00	false	false		
130	Rural Multi-Lane Segment Four-lane Divided	894+50.000	895+15.000	65.00	0.0123	2018-2022: 4,900	12.00	12.00	8.00	8.00	11.55	Non-Traversable Median	11.55	false	false		
131	Rural Multi-Lane Segment Four-lane Divided	895+15.000	895+60.000	45.00	0.0085	2018-2022: 4,900	12.00	12.00	8.00	8.00	17.55	Non-Traversable Median	17.55	false	false		
132	Rural Multi-Lane Segment Four-lane Divided	895+60.000	898+00.000	240.00	0.0455	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
133	Rural Multi-Lane Segment Four-lane Divided	898+00.000	906+70.000	870.00	0.1648	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
134	Rural Multi-Lane Segment Four-lane Divided	906+70.000	907+21.000	51.00	0.0097	2018-2022: 4,900	12.00	12.00	8.00	8.00	17.45	Non-Traversable Median	17.45	false	false		
135	Rural Multi-Lane Segment Four-lane Divided	907+21.000	907+80.000	59.00	0.0112	2018-2022: 4,900	12.00	12.00	8.00	8.00	11.95	Non-Traversable Median	11.95	false	false		
136	Rural Multi-Lane Segment Four-lane Divided	907+80.000	907+90.000	10.00	0.0019	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.50	Non-Traversable Median	19.50	false	false		
137	Rural Multi-Lane Segment Four-lane Divided	907+90.000	913+70.000	580.00	0.1098	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	19.00	false	false		
138	Rural Multi-Lane Segment Four-lane Divided	913+70.000	914+00.000	30.00	0.0057	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Traversable Median	19.00	false	false		
139	Rural Multi-Lane Segment Four-lane Divided	914+00.000	914+30.000	30.00	0.0057	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Traversable Median	19.00	false	false		
140	Rural Multi-Lane Segment Four-lane Undivided	914+30.000	914+40.000	10.00	0.0019	2018-2022: 4,900	12.00	12.00	8.00	8.00	0.00	None	0.00	false	false	0:1	0:1
141	Rural Multi-Lane Segment Four-lane Undivided	914+40.000	915+40.000	100.00	0.0189	2018-2022: 4,900	12.00	12.00	0.00	0.00	0.00	None	0.00	false	false	0:1	0:1
142	Rural Multi-Lane Segment Four-lane Divided	915+40.000	916+00.000	60.00	0.0114	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Traversable Median	19.00	false	false		
143	Rural Multi-Lane Segment Four-lane Divided	916+00.000	921+00.000	500.00	0.0947	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	19.00	false	false		
144	Rural Multi-Lane Segment Four-lane Divided	921+00.000	921+90.000	90.00	0.0170	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	19.00	false	false		
145	Rural Multi-Lane Segment Four-lane Divided	921+90.000	922+00.000	10.00	0.0019	2018-2022: 4,900	12.00	12.00	8.00	8.00	8.00	Non-Traversable Median	8.00	false	false		
146	Rural Multi-Lane Segment Four-lane Divided	922+00.000	922+59.000	59.00	0.0112	2018-2022: 4,900	12.00	12.00	8.00	8.00	11.54	Non-Traversable Median	11.54	false	false		
147	Rural Multi-Lane Segment Four-lane Divided	922+59.000	923+00.000	41.00	0.0078	2018-2022: 4,900	12.00	12.00	8.00	8.00	17.54	Non-Traversable Median	17.54	false	false		
148	Rural Multi-Lane Segment Four-lane Divided	923+00.000	941+70.000	1,870.00	0.3542	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		
149	Rural Multi-Lane Segment Four-lane Divided	941+70.000	948+50.000	680.00	0.1288	2018-2022: 4,900	12.00	12.00	8.00	8.00	20.00	Non-Traversable Median	20.00	false	false		

Table 4. Evaluation Intersection (Section 3)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
1	I90EBRamps_S466th_SD38 (v1)	Rural Multi-Lane Intersection Four-Legged w/STOP control	699+20.000	2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170	2025: 630; 2026: 644; 2027: 657; 2028: 671; 2029: 685; 2030: 700; 2031: 716; 2032: 732; 2033: 748; 2034: 764; 2035: 780; 2036: 796; 2037: 812; 2038: 828; 2039: 844; 2040: 860; 2041: 1,166; 2042: 1,473; 2043: 1,779; 2044: 2,086; 2045: 2,392; 2046: 2,699; 2047: 3,005; 2048: 3,312; 2049: 3,618; 2050: 3,925	4	Stop-Controlled	1	0	4.64	4.27	false
2	SD38/260th_St (v1)	Rural Multi-Lane Intersection Four-Legged w/STOP control	605+70.000	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	2025: 1,508; 2026: 1,706; 2027: 1,904; 2028: 2,102; 2029: 2,300; 2030: 2,472; 2031: 2,645; 2032: 2,818; 2033: 2,990; 2034: 3,163; 2035: 3,336; 2036: 3,509; 2037: 3,681; 2038: 3,854; 2039: 4,027; 2040: 4,200; 2041: 4,260; 2042: 4,320; 2043: 4,380; 2044: 4,440; 2045: 4,500; 2046: 4,560; 2047: 4,620; 2048: 4,680; 2049: 4,740; 2050: 4,800	4	Stop-Controlled	2	1	16.83	13.71	false
3	466thN/SD38 (v1)	Rural Multi-Lane Intersection Three-Legged w/STOP control	676+50.000	2025: 7,901; 2026: 9,093; 2027: 10,285; 2028: 11,477; 2029: 12,670; 2030: 12,965; 2031: 13,260; 2032: 13,556; 2033: 13,851; 2034: 14,147; 2035: 14,442; 2036: 14,738; 2037: 15,033; 2038: 15,329; 2039: 15,624; 2040: 15,920; 2041: 16,287; 2042: 16,654; 2043: 17,021; 2044: 17,388; 2045: 17,755; 2046: 18,122; 2047: 18,489; 2048: 18,856; 2049: 19,223; 2050: 19,590	2025: 118; 2026: 121; 2027: 124; 2028: 127; 2029: 130; 2030: 133; 2031: 136; 2032: 139; 2033: 142; 2034: 145; 2035: 149; 2036: 152; 2037: 155; 2038: 158; 2039: 161; 2040: 165; 2041: 168; 2042: 172; 2043: 175; 2044: 179; 2045: 182; 2046: 186; 2047: 189; 2048: 193; 2049: 196; 2050: 200	3	Stop-Controlled	0	0	6.61		false

Table 5. Evaluation Intersection (Section 3)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
5	468th Ave (v1)	Rural Multi-Lane Intersection Four-Legged w/STOP control	809+00.000	2025: 6,164; 2026: 6,585; 2027: 7,007; 2028: 7,428; 2029: 7,850; 2030: 8,018; 2031: 8,186; 2032: 8,354; 2033: 8,522; 2034: 8,690; 2035: 8,859; 2036: 9,027; 2037: 9,195; 2038: 9,363; 2039: 9,531; 2040: 9,700; 2041: 9,905; 2042: 10,110; 2043: 10,315; 2044: 10,520; 2045: 10,725; 2046: 10,930; 2047: 11,135; 2048: 11,340; 2049: 11,545; 2050: 11,750	2025: 667; 2026: 682; 2027: 696; 2028: 710; 2029: 725; 2030: 741; 2031: 758; 2032: 775; 2033: 792; 2034: 809; 2035: 825; 2036: 842; 2037: 859; 2038: 876; 2039: 893; 2040: 910; 2041: 1,052; 2042: 1,195; 2043: 1,337; 2044: 1,480; 2045: 1,622; 2046: 1,765; 2047: 1,907; 2048: 2,050; 2049: 2,192; 2050: 2,335	4	Stop-Controlled	1	0	0.00	0.00	false
6	SD38/Hwy 139 (v1)	Rural Multi-Lane Intersection Four-Legged w/STOP control	862+00.000	2025: 6,704; 2026: 7,305; 2027: 7,907; 2028: 8,508; 2029: 9,110; 2030: 9,295; 2031: 9,480; 2032: 9,666; 2033: 9,851; 2034: 10,037; 2035: 10,222; 2036: 10,408; 2037: 10,593; 2038: 10,779; 2039: 10,964; 2040: 11,150; 2041: 11,375; 2042: 11,600; 2043: 11,825; 2044: 12,050; 2045: 12,275; 2046: 12,500; 2047: 12,725; 2048: 12,950; 2049: 13,175; 2050: 13,400	2025: 2,990; 2026: 3,054; 2027: 3,117; 2028: 3,181; 2029: 3,245; 2030: 3,321; 2031: 3,397; 2032: 3,474; 2033: 3,550; 2034: 3,626; 2035: 3,703; 2036: 3,779; 2037: 3,855; 2038: 3,932; 2039: 4,008; 2040: 4,085; 2041: 4,178; 2042: 4,271; 2043: 4,364; 2044: 4,457; 2045: 4,550; 2046: 4,643; 2047: 4,736; 2048: 4,829; 2049: 4,922; 2050: 5,015	4	Stop-Controlled	1	0	0.00	0.00	false
7	LaMesa/SD 38 (v1)	Rural Multi-Lane Intersection Four-Legged w/STOP control	915+00.000	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	2025: 1,266; 2026: 1,293; 2027: 1,320; 2028: 1,347; 2029: 1,375; 2030: 1,407; 2031: 1,439; 2032: 1,471; 2033: 1,504; 2034: 1,536; 2035: 1,568; 2036: 1,725; 2037: 1,949; 2038: 2,172; 2039: 2,396; 2040: 2,620; 2041: 2,940; 2042: 3,261; 2043: 3,581; 2044: 3,902; 2045: 4,222; 2046: 4,543; 2047: 4,863; 2048: 5,184; 2049: 5,504; 2050: 5,825	4	Stop-Controlled	0	0	0.00	0.00	false

Table 6. Evaluation Ramp Terminal - Site (Section 3)

Inter. No.	Title	Type	Area Type	Legs	Location (Sta. ft)	Traffic Control	AADT
4	I90WB Ramps (v2)	Freeway Ramp Terminal A2 - Three-Leg at Two-Quadrant Parclo A	Rural	4	681+00.000	Stop-Controlled	Inside: 2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170; Outside: 2025: 5,705; 2026: 6,224; 2027: 6,742; 2028: 7,261; 2029: 7,780; 2030: 8,004; 2031: 8,229; 2032: 8,453; 2033: 8,678; 2034: 8,902; 2035: 9,127; 2036: 9,351; 2037: 9,576; 2038: 9,800; 2039: 10,025; 2040: 10,250; 2041: 10,542; 2042: 10,834; 2043: 11,126; 2044: 11,418; 2045: 11,710; 2046: 12,002; 2047: 12,294; 2048: 12,586; 2049: 12,878; 2050: 13,170 :: Entrance: 2025: 856; 2026: 875; 2027: 893; 2028: 911; 2029: 930; 2030: 951; 2031: 973; 2032: 995; 2033: 1,017; 2034: 1,039; 2035: 1,060; 2036: 1,082; 2037: 1,104; 2038: 1,126; 2039: 1,148; 2040: 1,170; 2041: 1,339; 2042: 1,508; 2043: 1,677; 2044: 1,846; 2045: 2,015; 2046: 2,184; 2047: 2,353; 2048: 2,522; 2049: 2,691; 2050: 2,860

Table 7. Crash History Intersection (Section 3)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
1	I90EBRamps_S466th_SD38 (v1)	Rural Multi-Lane Intersection Four-Legged w/STOP control	699+20.000	2018-2022: 4,150	2018-2022: 590	4	Stop-Controlled	1	0	4.64	4.27	false
2	SD38/260th_St (v1)	Rural Multi-Lane Intersection Four-Legged w/STOP control	605+70.000	2018-2022: 4,325	2018-2022: 915	4	Stop-Controlled	2	1	16.83	13.71	false
3	466thN/SD38 (v1)	Rural Multi-Lane Intersection Three-Legged w/STOP control	676+50.000	2018-2022: 4,325	2018-2022: 110	3	Stop-Controlled	0	0	6.61		false

Table 8. Crash History Intersection (Section 3)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Major road approaches w/Left Turn Lanes	Major road approaches w/Right Turn Lanes	Skew1	Skew2	Lighted at Night
5	468th Ave (v1)	Rural Multi-Lane Intersection Four-Legged w/STOP control	809+00.000	2018-2022: 4,900	2018-2022: 625	4	Stop-Controlled	1	0	0.00	0.00	false
6	SD38/Hwy139 (v1)	Rural Multi-Lane Intersection Four-Legged w/STOP control	862+00.000	2018-2022: 4,900	2018-2022: 2,800	4	Stop-Controlled	1	0	0.00	0.00	false
7	LaMesa/SD38 (v1)	Rural Multi-Lane Intersection Four-Legged w/STOP control	915+00.000	2018-2022: 4,900	2018-2022: 1,185	4	Stop-Controlled	0	0	0.00	0.00	false

Table 9. Crash Highway Ramp Terminal - Site (Highway with Crash History)

Inter. No.	Title	Type	Area Type	Legs	Location (Sta. ft)	Traffic Control	AADT
4	I90WB Ramps (v2)	Freeway Ramp Terminal A2 - Three-Leg at Two-Quadrant Parclo A	Rural	4	681+00.000	Stop-Controlled	Inside: 2018-2022: 4,150; Outside: 2018-2022: 4,150 :: Entrance: 2018-2022: 802

Table 10. Expected Highway Crash Rates and Frequencies Summary (Section 3)

First Year of Analysis	**2025**
Last Year of Analysis	**2050**
Evaluated Length (mi)	**6.8845**
Average Future Road AADT (vpd)	**10,372**
Expected Crashes	
Total Crashes	**611.54**
Fatal and Injury Crashes	**316.56**
Fatal and Serious Injury Crashes	**206.04**
Property-Damage-Only Crashes	**294.99**
Percent of Total Expected Crashes	
Percent Fatal and Injury Crashes (%)	**52**
Percent Fatal and Serious Injury Crashes (%)	**34**
Percent Property-Damage-Only Crashes (%)	**48**
Expected Crash Rate	
Crash Rate (crashes/mi/yr)	**3.4165**
FI Crash Rate (crashes/mi/yr)	**1.7685**
FI no/C Crash Rate (crashes/mi/yr)	**1.1511**
PDO Crash Rate (crashes/mi/yr)	**1.6480**
Expected Travel Crash Rate	
Total Travel (million veh-mi)	**677.62**
Travel Crash Rate (crashes/million veh-mi)	**0.90**
Travel FI Crash Rate (crashes/million veh-mi)	**0.47**
Travel FI no/C Crash Rate (crashes/million veh-mi)	**0.30**
Travel PDO Crash Rate (crashes/million veh-mi)	**0.43**

Table 11. Expected Crash Frequencies and Rates by Highway Segment/Intersection (Section 3)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected FI no/C Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted FI no/C Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) FI no/C Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
1	585+00.000	586+00.000	0.0189	0.613	1.124	0.0236	0.0131	0.0090	0.0105	0.0432	0.0222	0.0140	0.0211	-0.0197	-0.0091	-0.0050	-0.0106	1.2449	0.28	
2	586+00.000	593+75.000	0.1468	11.628	8.711	0.4472	0.3303	0.2278	0.1170	0.3350	0.1718	0.1087	0.1632	0.1122	0.1584	0.1191	-0.0462	3.0469	0.70	
3	593+75.000	594+84.940	0.0208	0.674	1.236	0.0259	0.0144	0.0099	0.0115	0.0475	0.0244	0.0154	0.0231	-0.0216	-0.0100	-0.0055	-0.0116	1.2449	0.28	
4	594+84.940	600+00.000	0.0975	3.158	5.789	0.1214	0.0674	0.0465	0.0540	0.2227	0.1142	0.0723	0.1085	-0.1012	-0.0468	-0.0257	-0.0545	1.2449	0.28	
5	600+00.000	600+42.000	0.0080	0.258	0.472	0.0099	0.0055	0.0038	0.0044	0.0182	0.0093	0.0059	0.0088	-0.0083	-0.0038	-0.0021	-0.0044	1.2449	0.28	
6	600+42.000	601+00.000	0.0110	0.356	0.652	0.0137	0.0076	0.0052	0.0061	0.0251	0.0129	0.0081	0.0122	-0.0114	-0.0053	-0.0029	-0.0061	1.2449	0.28	
7	601+00.000	602+00.000	0.0189	0.613	1.124	0.0236	0.0131	0.0090	0.0105	0.0432	0.0222	0.0140	0.0211	-0.0197	-0.0091	-0.0050	-0.0106	1.2449	0.28	
8	602+00.000	605+00.000	0.0568	11.046	4.273	0.4249	0.0886	0.0611	0.3362	0.1644	0.0825	0.0512	0.0818	0.2605	0.0061	0.0099	0.2544	7.4774	1.37	
9	605+00.000	605+10.000	0.0019	0.081	0.155	0.0031	0.0017	0.0012	0.0014	0.0060	0.0030	0.0019	0.0030	-0.0028	-0.0013	-0.0007	-0.0016	1.6521	0.30	
10	605+10.000	605+40.000	0.0057	0.247	0.475	0.0095	0.0053	0.0036	0.0042	0.0183	0.0092	0.0057	0.0091	-0.0088	-0.0039	-0.0021	-0.0049	1.6693	0.30	
11	605+40.000	605+60.000	0.0038	0.248	0.543	0.0095	0.0058	0.0036	0.0038	0.0209	0.0121	0.0062	0.0088	-0.0114	-0.0063	-0.0026	-0.0050	2.5153	0.46	
12	605+60.000	605+70.000	0.0019	0.119	0.249	0.0046	0.0028	0.0017	0.0018	0.0096	0.0056	0.0028	0.0040	-0.0050	-0.0028	-0.0011	-0.0022	2.4181	0.44	
SD38/260th_St (v1)	605+70.000			35.375	96.924	1.3606	0.5456	0.3469	0.8150	3.7279	1.7583	0.8841	1.9696	-2.3673	-1.2127	-0.5372	-1.1546			0.20
13	605+70.000	605+75.000	0.0009	0.059	0.125	0.0023	0.0014	0.0009	0.0009	0.0048	0.0028	0.0014	0.0020	-0.0025	-0.0014	-0.0006	-0.0011	2.4181	0.44	
14	605+75.000	606+00.000	0.0047	0.298	0.624	0.0114	0.0069	0.0043	0.0045	0.0240	0.0139	0.0071	0.0101	-0.0125	-0.0069	-0.0028	-0.0056	2.4181	0.44	
15	606+00.000	607+50.000	0.0284	9.988	2.179	0.3841	0.3471	0.2395	0.0370	0.0838	0.0421	0.0261	0.0417	0.3003	0.3050	0.2134	-0.0047	13.5216	2.47	
16	607+50.000	609+00.000	0.0284	1.165	2.137	0.0448	0.0249	0.0172	0.0199	0.0822	0.0413	0.0256	0.0409	-0.0374	-0.0164	-0.0084	-0.0210	1.5777	0.29	
17	609+00.000	609+21.930	0.0042	8.886	0.312	0.3418	0.0080	0.0055	0.3338	0.0120	0.0060	0.0037	0.0060	0.3297	0.0020	0.0018	0.3278	82.2842	15.04	
18	609+21.930	611+40.000	0.0413	1.694	3.106	0.0652	0.0362	0.0250	0.0290	0.1195	0.0600	0.0372	0.0595	-0.0543	-0.0238	-0.0123	-0.0305	1.5777	0.29	
19	611+40.000	611+50.000	0.0019	0.078	0.142	0.0030	0.0017	0.0011	0.0013	0.0055	0.0028	0.0017	0.0027	-0.0025	-0.0011	-0.0006	-0.0014	1.5777	0.29	
20	611+50.000	612+09.000	0.0112	0.458	0.840	0.0176	0.0098	0.0068	0.0078	0.0323	0.0162	0.0101	0.0161	-0.0147	-0.0064	-0.0033	-0.0083	1.5777	0.29	
21	612+09.000	612+50.000	0.0078	0.319	0.584	0.0123	0.0068	0.0047	0.0054	0.0225	0.0113	0.0070	0.0112	-0.0102	-0.0045	-0.0023	-0.0057	1.5777	0.29	
22	612+50.000	624+64.530	0.2300	18.151	17.300	0.6981	0.2748	0.1896	0.4233	0.6654	0.3341	0.2073	0.3313	0.0327	-0.0593	-0.0177	0.0920	3.0350	0.56	
23	624+64.530	631+30.000	0.1260	5.170	9.479	0.1989	0.1104	0.0762	0.0884	0.3646	0.1831	0.1136	0.1815	-0.1657	-0.0726	-0.0374	-0.0931	1.5777	0.29	
24	631+30.000	631+81.000	0.0097	0.396	0.727	0.0152	0.0085	0.0058	0.0068	0.0279	0.0140	0.0087	0.0139	-0.0127	-0.0056	-0.0029	-0.0071	1.5777	0.29	
25	631+81.000	632+50.000	0.0131	0.536	0.983	0.0206	0.0114	0.0079	0.0092	0.0378	0.0190	0.0118	0.0188	-0.0172	-0.0075	-0.0039	-0.0097	1.5777	0.29	
26	632+50.000	636+92.820	0.0839	3.440	6.308	0.1323	0.0735	0.0507	0.0588	0.2426	0.1218	0.0756	0.1208	-0.1103	-0.0483	-0.0249	-0.0620	1.5777	0.29	
27	636+92.820	638+80.000	0.0355	1.454	2.666	0.0559	0.0311	0.0214	0.0249	0.1025	0.0515	0.0320	0.0511	-0.0466	-0.0204	-0.0105	-0.0262	1.5777	0.29	
28	638+80.000	639+00.000	0.0038	0.157	0.291	0.0060	0.0034	0.0023	0.0027	0.0112	0.0056	0.0035	0.0056	-0.0051	-0.0023	-0.0012	-0.0029	1.5948	0.29	
29	639+00.000	640+00.000	0.0189	1.282	2.935	0.0493	0.0297	0.0185	0.0196	0.1129	0.0653	0.0334	0.0476	-0.0636	-0.0356	-0.0149	-0.0280	2.6043	0.48	
30	640+00.000	640+20.000	0.0038	0.157	0.291	0.0060	0.0034	0.0023	0.0027	0.0112	0.0056	0.0035	0.0056	-0.0051	-0.0023	-0.0012	-0.0029	1.5948	0.29	
31	640+20.000	645+50.000	0.1004	12.833	7.550	0.4936	0.1412	0.0974	0.3524	0.2904	0.1458	0.0905	0.1446	0.2032	-0.0046	0.0069	0.2078	4.9172	0.90	
32	645+50.000	646+30.000	0.0152	0.622	1.140	0.0239	0.0133	0.0092	0.0106	0.0438	0.0220	0.0137	0.0218	-0.0199	-0.0087	-0.0045	-0.0112	1.5777	0.29	
33	646+30.000	647+00.000	0.0133	0.544	0.997	0.0209	0.0116	0.0080	0.0093	0.0384	0.0193	0.0119	0.0191	-0.0174	-0.0076	-0.0039	-0.0098	1.5777	0.29	
34	647+00.000	647+26.050	0.0049	0.202	0.371	0.0078	0.0043	0.0030	0.0035	0.0143	0.0072	0.0044	0.0071	-0.0065	-0.0028	-0.0015	-0.0036	1.5777	0.29	
35	647+26.050	647+50.000	0.0045	0.186	0.341	0.0072	0.0040	0.0027	0.0032	0.0131	0.0066	0.0041	0.0065	-0.0060	-0.0026	-0.0013	-0.0034	1.5777	0.29	
36	647+50.000	648+00.000	0.0095	0.389	0.712	0.0149	0.0083	0.0057	0.0066	0.0274	0.0138	0.0085	0.0136	-0.0125	-0.0055	-0.0028	-0.0070	1.5777	0.29	
37	648+00.000	648+42.000	0.0080	0.326	0.598	0.0126	0.0070	0.0048	0.0056	0.0230	0.0116	0.0072	0.0115	-0.0105	-0.0046	-0.0024	-0.0059	1.5777	0.29	
38	648+42.000	649+00.000	0.0110	0.451	0.826	0.0173	0.0096	0.0066	0.0077	0.0318	0.0160	0.0099	0.0158	-0.0144	-0.0063	-0.0033	-0.0081	1.5777	0.29	

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected FI no/C Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted FI no/C Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) FI no/C Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
39	649+00.000	649+20.000	0.0038	0.155	0.285	0.0060	0.0033	0.0023	0.0027	0.0110	0.0055	0.0034	0.0055	-0.0050	-0.0022	-0.0011	-0.0028	1.5777	0.29	
40	649+20.000	655+50.000	0.1193	13.610	8.974	0.5235	0.1622	0.1119	0.3612	0.3452	0.1733	0.1075	0.1718	0.1783	-0.0111	0.0044	0.1894	4.3871	0.80	
41	655+50.000	655+70.000	0.0038	0.157	0.291	0.0060	0.0034	0.0023	0.0027	0.0112	0.0056	0.0035	0.0056	-0.0051	-0.0023	-0.0012	-0.0029	1.5948	0.29	
42	655+70.000	656+50.000	0.0152	0.953	1.996	0.0366	0.0222	0.0138	0.0144	0.0768	0.0444	0.0227	0.0324	-0.0401	-0.0222	-0.0089	-0.0179	2.4181	0.44	
43	656+50.000	667+80.000	0.2140	17.494	16.096	0.6729	0.2592	0.1788	0.4136	0.6191	0.3109	0.1929	0.3082	0.0538	-0.0516	-0.0141	0.1054	3.1440	0.57	
44	667+80.000	668+50.000	0.0133	0.570	1.087	0.0219	0.0122	0.0084	0.0098	0.0418	0.0210	0.0130	0.0208	-0.0199	-0.0088	-0.0046	-0.0111	1.6521	0.30	
45	668+50.000	668+80.000	0.0057	0.244	0.466	0.0094	0.0052	0.0036	0.0042	0.0179	0.0090	0.0056	0.0089	-0.0085	-0.0038	-0.0020	-0.0047	1.6521	0.30	
46	668+80.000	669+05.000	0.0047	0.194	0.356	0.0075	0.0041	0.0029	0.0033	0.0137	0.0069	0.0043	0.0068	-0.0062	-0.0027	-0.0014	-0.0035	1.5777	0.29	
47	669+05.000	669+80.000	0.0142	0.583	1.068	0.0224	0.0124	0.0086	0.0100	0.0411	0.0206	0.0128	0.0205	-0.0187	-0.0082	-0.0042	-0.0105	1.5777	0.29	
48	669+80.000	672+86.110	0.0580	2.378	4.360	0.0915	0.0508	0.0350	0.0407	0.1677	0.0842	0.0523	0.0835	-0.0762	-0.0334	-0.0172	-0.0428	1.5777	0.29	
49	672+86.110	675+50.000	0.0500	19.481	3.759	0.7493	0.6841	0.4719	0.0652	0.1446	0.0726	0.0450	0.0720	0.6047	0.6115	0.4269	-0.0068	14.9916	2.74	
50	675+50.000	676+00.000	0.0095	0.397	0.741	0.0153	0.0085	0.0058	0.0068	0.0285	0.0143	0.0089	0.0142	-0.0132	-0.0058	-0.0030	-0.0074	1.6115	0.29	
51	676+00.000	676+30.000	0.0057	9.563	0.484	0.3678	0.3592	0.2478	0.0086	0.0186	0.0094	0.0058	0.0093	0.3492	0.3499	0.2420	-0.0007	64.7353	11.83	
52	676+30.000	677+50.000	0.0227	13.736	3.258	0.5283	0.4896	0.3051	0.0387	0.1253	0.0725	0.0371	0.0528	0.4030	0.4171	0.2680	-0.0141	23.2451	4.25	
466thN/SD38 (v1)	676+50.000			22.161	36.857	0.8523	0.4087	0.2971	0.4437	1.4176	0.6242	0.3958	0.7934	-0.5652	-0.2155	-0.0987	-0.3497			0.15
53	677+50.000	679+00.000	0.0284	27.311	2.137	1.0504	0.3890	0.2684	0.6614	0.0822	0.0413	0.0256	0.0409	0.9683	0.3477	0.2428	0.6205	36.9756	6.76	
54	679+00.000	680+20.000	0.0227	0.604	1.085	0.0232	0.0129	0.0090	0.0103	0.0417	0.0218	0.0140	0.0199	-0.0185	-0.0089	-0.0051	-0.0097	1.0213	0.29	
55	680+20.000	680+80.000	0.0114	0.305	0.553	0.0117	0.0065	0.0045	0.0052	0.0213	0.0111	0.0072	0.0102	-0.0096	-0.0046	-0.0026	-0.0050	1.0325	0.29	
56	680+80.000	681+00.000	0.0038	0.106	0.201	0.0041	0.0023	0.0016	0.0018	0.0077	0.0040	0.0026	0.0037	-0.0036	-0.0018	-0.0010	-0.0019	1.0818	0.30	
I90WB Ramps (v2)	681+00.000			15.671	11.679	0.6027	0.3058		0.2969	0.4492	0.1413		0.3079	0.1535	0.1646		-0.0111			0.16
57	681+00.000	682+20.000	0.0227	0.917	1.958	0.0353	0.0214	0.0134	0.0139	0.0753	0.0451	0.0247	0.0302	-0.0401	-0.0237	-0.0113	-0.0163	1.5517	0.44	
58	682+20.000	683+82.710	0.0308	0.818	1.471	0.0315	0.0175	0.0121	0.0139	0.0566	0.0296	0.0190	0.0270	-0.0251	-0.0120	-0.0069	-0.0131	1.0213	0.29	
59	683+82.710	690+00.000	0.1169	3.104	5.582	0.1194	0.0665	0.0461	0.0529	0.2147	0.1121	0.0721	0.1026	-0.0953	-0.0456	-0.0261	-0.0497	1.0213	0.29	
60	690+00.000	691+50.000	0.0284	0.791	1.478	0.0304	0.0169	0.0117	0.0135	0.0569	0.0297	0.0191	0.0272	-0.0265	-0.0128	-0.0074	-0.0137	1.0704	0.30	
61	691+50.000	692+01.000	0.0097	0.269	0.503	0.0103	0.0058	0.0040	0.0046	0.0193	0.0101	0.0065	0.0092	-0.0090	-0.0043	-0.0025	-0.0047	1.0704	0.30	
62	692+01.000	692+70.000	0.0131	0.364	0.680	0.0140	0.0078	0.0054	0.0062	0.0262	0.0137	0.0088	0.0125	-0.0122	-0.0059	-0.0034	-0.0063	1.0704	0.30	
63	692+70.000	693+85.010	0.0218	0.606	1.134	0.0233	0.0130	0.0090	0.0103	0.0436	0.0228	0.0147	0.0208	-0.0203	-0.0098	-0.0057	-0.0105	1.0704	0.30	
64	693+85.010	698+50.000	0.0881	2.451	4.583	0.0943	0.0525	0.0363	0.0418	0.1763	0.0921	0.0592	0.0842	-0.0820	-0.0396	-0.0229	-0.0424	1.0704	0.30	
65	698+50.000	698+70.000	0.0038	0.106	0.201	0.0041	0.0023	0.0016	0.0018	0.0077	0.0040	0.0026	0.0037	-0.0036	-0.0018	-0.0010	-0.0019	1.0818	0.30	
66	698+70.000	699+20.000	0.0095	0.278	0.544	0.0107	0.0059	0.0041	0.0047	0.0209	0.0109	0.0070	0.0100	-0.0103	-0.0050	-0.0029	-0.0053	1.1273	0.32	
I90EBRamps_S466th_SD38 (v1)	699+20.000			20.777	59.524	0.7991	0.3462	0.2319	0.4529	2.2894	1.2112	0.6869	1.0782	-1.4903	-0.8649	-0.4550	-0.6253			0.20
67	699+20.000	700+40.000	0.0227	0.950	2.117	0.0365	0.0221	0.0139	0.0145	0.0814	0.0488	0.0267	0.0326	-0.0449	-0.0267	-0.0128	-0.0182	1.6081	0.45	
68	700+40.000	700+50.000	0.0019	0.056	0.111	0.0022	0.0012	0.0008	0.0010	0.0043	0.0022	0.0014	0.0020	-0.0021	-0.0010	-0.0006	-0.0011	1.1385	0.32	
69	700+50.000	701+10.000	0.0114	0.323	0.615	0.0124	0.0069	0.0048	0.0055	0.0237	0.0124	0.0079	0.0113	-0.0112	-0.0054	-0.0032	-0.0058	1.0929	0.31	
70	701+10.000	702+00.000	0.0170	0.474	0.887	0.0182	0.0102	0.0070	0.0081	0.0341	0.0178	0.0115	0.0163	-0.0159	-0.0077	-0.0044	-0.0082	1.0704	0.30	
71	702+00.000	702+50.000	0.0095	0.199	0.404	0.0076	0.0042	0.0029	0.0034	0.0155	0.0083	0.0054	0.0073	-0.0079	-0.0041	-0.0025	-0.0038	0.8065	0.27	
72	702+50.000	707+00.000	0.0852	1.712	3.338	0.0658	0.0362	0.0247	0.0296	0.1284	0.0683	0.0447	0.0601	-0.0625	-0.0321	-0.0200	-0.0305	0.7724	0.26	
73	707+00.000	708+00.000	0.0189	0.380	0.742	0.0146	0.0080	0.0055	0.0066	0.0285	0.0152	0.0099	0.0134	-0.0139	-0.0071	-0.0044	-0.0068	0.7724	0.26	
74	708+00.000	708+80.000	0.0152	0.304	0.593	0.0117	0.0064	0.0044	0.0053	0.0228	0.0121	0.0079	0.0107	-0.0111	-0.0057	-0.0035	-0.0054	0.7724	0.26	
75	708+80.000	709+00.000	0.0038	0.077	0.151	0.0030	0.0016	0.0011	0.0013	0.0058	0.0031	0.0020	0.0027	-0.0029	-0.0015	-0.0009	-0.0014	0.7802	0.27	
76	709+00.000	710+30.000	0.0246	0.687	1.558	0.0264	0.0158	0.0096	0.0106	0.0599	0.0365	0.0206	0.0234	-0.0335	-0.0207	-0.0110	-0.0128	1.0727	0.36	

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected FI no/C Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted FI no/C Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) FI no/C Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
77	710+30.000	710+47.850	0.0034	0.068	0.132	0.0026	0.0014	0.0010	0.0012	0.0051	0.0027	0.0018	0.0024	-0.0025	-0.0013	-0.0008	-0.0012	0.7724	0.26	
78	710+47.850	725+00.000	0.2750	18.323	10.771	0.7047	0.3140	0.2144	0.3907	0.4143	0.2203	0.1442	0.1939	0.2905	0.0937	0.0702	0.1968	2.5624	0.87	
79	725+00.000	727+52.350	0.0478	0.960	1.872	0.0369	0.0203	0.0139	0.0166	0.0720	0.0383	0.0251	0.0337	-0.0351	-0.0180	-0.0112	-0.0171	0.7724	0.26	
80	727+52.350	735+00.000	0.1416	2.844	5.545	0.1094	0.0602	0.0411	0.0492	0.2133	0.1134	0.0742	0.0998	-0.1039	-0.0533	-0.0332	-0.0506	0.7724	0.26	
81	735+00.000	755+50.000	0.3883	7.797	15.205	0.2999	0.1650	0.1126	0.1349	0.5848	0.3111	0.2035	0.2737	-0.2849	-0.1461	-0.0909	-0.1388	0.7724	0.26	
82	755+50.000	756+90.000	0.0265	0.740	1.678	0.0284	0.0170	0.0104	0.0114	0.0645	0.0393	0.0222	0.0252	-0.0361	-0.0223	-0.0118	-0.0138	1.0727	0.36	
83	756+90.000	757+00.000	0.0019	0.038	0.076	0.0015	0.0008	0.0006	0.0007	0.0029	0.0015	0.0010	0.0014	-0.0014	-0.0007	-0.0005	-0.0007	0.7802	0.27	
84	757+00.000	763+30.000	0.1193	2.396	4.673	0.0922	0.0507	0.0346	0.0415	0.1797	0.0956	0.0626	0.0841	-0.0876	-0.0449	-0.0279	-0.0427	0.7724	0.26	
85	763+30.000	764+00.000	0.0133	0.266	0.519	0.0102	0.0056	0.0038	0.0046	0.0200	0.0106	0.0070	0.0093	-0.0097	-0.0050	-0.0031	-0.0047	0.7724	0.26	
86	764+00.000	764+50.000	0.0095	0.190	0.371	0.0073	0.0040	0.0027	0.0033	0.0143	0.0076	0.0050	0.0067	-0.0069	-0.0036	-0.0022	-0.0034	0.7724	0.26	
87	764+50.000	765+52.550	0.0194	0.390	0.761	0.0150	0.0083	0.0056	0.0067	0.0293	0.0156	0.0102	0.0137	-0.0143	-0.0073	-0.0045	-0.0069	0.7724	0.26	
88	765+52.550	777+80.000	0.2325	8.935	9.104	0.3437	0.1340	0.0915	0.2097	0.3502	0.1862	0.1219	0.1639	-0.0065	-0.0523	-0.0304	0.0458	1.4783	0.50	
89	777+80.000	778+80.000	0.0189	0.528	1.198	0.0203	0.0121	0.0074	0.0082	0.0461	0.0281	0.0159	0.0180	-0.0258	-0.0159	-0.0084	-0.0098	1.0727	0.36	
90	778+80.000	779+00.000	0.0038	0.077	0.151	0.0030	0.0016	0.0011	0.0013	0.0058	0.0031	0.0020	0.0027	-0.0029	-0.0015	-0.0009	-0.0014	0.7802	0.27	
91	779+00.000	780+45.930	0.0276	0.555	1.082	0.0213	0.0117	0.0080	0.0096	0.0416	0.0221	0.0145	0.0195	-0.0203	-0.0104	-0.0065	-0.0099	0.7724	0.26	
92	780+45.930	785+40.000	0.0936	1.879	3.664	0.0723	0.0398	0.0271	0.0325	0.1409	0.0750	0.0491	0.0660	-0.0687	-0.0352	-0.0219	-0.0335	0.7724	0.26	
93	785+40.000	785+50.000	0.0019	0.038	0.074	0.0015	0.0008	0.0005	0.0007	0.0029	0.0015	0.0010	0.0013	-0.0014	-0.0007	-0.0004	-0.0007	0.7724	0.26	
94	785+50.000	786+09.000	0.0112	0.224	0.438	0.0086	0.0047	0.0032	0.0039	0.0168	0.0090	0.0059	0.0079	-0.0082	-0.0042	-0.0026	-0.0040	0.7724	0.26	
95	786+09.000	786+50.000	0.0078	0.156	0.304	0.0060	0.0033	0.0023	0.0027	0.0117	0.0062	0.0041	0.0055	-0.0057	-0.0029	-0.0018	-0.0028	0.7724	0.26	
96	786+50.000	801+10.000	0.2765	14.086	10.829	0.5418	0.2903	0.1982	0.2515	0.4165	0.2215	0.1450	0.1950	0.1253	0.0688	0.0532	0.0565	1.9593	0.67	
97	801+10.000	801+61.000	0.0097	0.194	0.378	0.0075	0.0041	0.0028	0.0034	0.0145	0.0077	0.0051	0.0068	-0.0071	-0.0036	-0.0023	-0.0035	0.7724	0.26	
98	801+61.000	802+30.000	0.0131	4.529	0.512	0.1742	0.1653	0.1128	0.0089	0.0197	0.0105	0.0069	0.0092	0.1545	0.1548	0.1060	-0.0003	13.3297	4.54	
99	802+30.000	802+40.000	0.0019	0.038	0.074	0.0015	0.0008	0.0005	0.0007	0.0029	0.0015	0.0010	0.0013	-0.0014	-0.0007	-0.0004	-0.0007	0.7724	0.26	
100	802+40.000	808+30.000	0.1117	2.244	4.376	0.0863	0.0475	0.0324	0.0388	0.1683	0.0895	0.0586	0.0788	-0.0820	-0.0420	-0.0262	-0.0400	0.7724	0.26	
101	808+30.000	808+80.000	0.0095	0.192	0.378	0.0074	0.0041	0.0028	0.0033	0.0145	0.0077	0.0051	0.0068	-0.0072	-0.0037	-0.0023	-0.0035	0.7802	0.27	
102	808+80.000	809+00.000	0.0038	0.106	0.240	0.0041	0.0024	0.0015	0.0016	0.0092	0.0056	0.0032	0.0036	-0.0052	-0.0032	-0.0017	-0.0020	1.0727	0.36	
468th Ave (v1)	809+00.000			30.877	45.501	1.1876	0.7630	0.5027	0.4246	1.7500	0.8386	0.4933	0.9115	-0.5624	-0.0756	0.0094	-0.4869			0.35
103	809+00.000	809+60.000	0.0114	0.400	0.998	0.0154	0.0091	0.0056	0.0063	0.0384	0.0231	0.0128	0.0153	-0.0230	-0.0140	-0.0072	-0.0090	1.3553	0.40	
104	809+60.000	810+00.000	0.0076	0.193	0.414	0.0074	0.0041	0.0028	0.0033	0.0159	0.0084	0.0054	0.0076	-0.0085	-0.0043	-0.0026	-0.0042	0.9798	0.29	
105	810+00.000	810+20.000	0.0038	0.089	0.175	0.0034	0.0019	0.0013	0.0015	0.0067	0.0035	0.0023	0.0032	-0.0033	-0.0017	-0.0010	-0.0017	0.9039	0.27	
106	810+20.000	816+00.000	0.1098	7.498	4.984	0.2884	0.0848	0.0579	0.2036	0.1917	0.1006	0.0651	0.0910	0.0967	-0.0158	-0.0071	0.1125	2.6254	0.78	
107	816+00.000	816+70.000	0.0133	0.308	0.602	0.0119	0.0065	0.0045	0.0053	0.0231	0.0121	0.0079	0.0110	-0.0113	-0.0056	-0.0034	-0.0057	0.8948	0.27	
108	816+70.000	817+20.000	0.0095	0.220	0.430	0.0085	0.0047	0.0032	0.0038	0.0165	0.0087	0.0056	0.0078	-0.0081	-0.0040	-0.0024	-0.0040	0.8948	0.27	
109	817+20.000	853+70.000	0.6913	40.796	31.361	1.5691	0.9058	0.6183	0.6633	1.2062	0.6332	0.4094	0.5730	0.3629	0.2725	0.2089	0.0903	2.2698	0.67	
110	853+70.000	854+00.000	0.0057	0.132	0.258	0.0051	0.0028	0.0019	0.0023	0.0099	0.0052	0.0034	0.0047	-0.0048	-0.0024	-0.0015	-0.0024	0.8948	0.27	
111	854+00.000	854+16.000	0.0030	0.070	0.138	0.0027	0.0015	0.0010	0.0012	0.0053	0.0028	0.0018	0.0025	-0.0026	-0.0013	-0.0008	-0.0013	0.8948	0.27	
112	854+16.000	854+80.000	0.0121	0.282	0.550	0.0108	0.0060	0.0041	0.0049	0.0211	0.0111	0.0072	0.0100	-0.0103	-0.0051	-0.0031	-0.0052	0.8948	0.27	
113	854+80.000	860+90.000	0.1155	2.688	5.241	0.1034	0.0569	0.0388	0.0465	0.2016	0.1058	0.0684	0.0958	-0.0982	-0.0490	-0.0296	-0.0493	0.8948	0.27	
114	860+90.000	861+85.000	0.0180	0.423	0.833	0.0163	0.0089	0.0061	0.0073	0.0320	0.0168	0.0109	0.0152	-0.0158	-0.0079	-0.0048	-0.0079	0.9039	0.27	
115	861+85.000	862+00.000	0.0028	0.097	0.231	0.0037	0.0022	0.0014	0.0015	0.0089	0.0053	0.0030	0.0035	-0.0051	-0.0031	-0.0016	-0.0020	1.3127	0.39	
SD38/Hwy139 (v1)	862+00.000			37.280	89.593	1.4338	0.6694	0.3723	0.7644	3.4459	1.8214	0.9272	1.6245	-2.0120	-1.1520	-0.5549	-0.8600			0.28

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected FI no/C Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted FI no/C Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) FI no/C Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
116	862+00.000	862+50.000	0.0095	0.379	0.903	0.0146	0.0087	0.0053	0.0059	0.0347	0.0207	0.0112	0.0141	-0.0201	-0.0120	-0.0059	-0.0082	1.5407	0.40	
117	862+50.000	862+60.000	0.0019	0.073	0.166	0.0028	0.0017	0.0010	0.0011	0.0064	0.0038	0.0021	0.0026	-0.0036	-0.0021	-0.0010	-0.0015	1.4857	0.38	
118	862+60.000	863+10.000	0.0095	0.257	0.505	0.0099	0.0054	0.0037	0.0044	0.0194	0.0101	0.0064	0.0094	-0.0096	-0.0046	-0.0027	-0.0049	1.0426	0.27	
119	863+10.000	869+00.000	0.1117	8.700	5.848	0.3346	0.0992	0.0677	0.2354	0.2249	0.1166	0.0745	0.1083	0.1097	-0.0174	-0.0068	0.1271	2.9945	0.77	
120	869+00.000	869+70.000	0.0133	0.356	0.694	0.0137	0.0075	0.0051	0.0062	0.0267	0.0138	0.0088	0.0128	-0.0130	-0.0063	-0.0037	-0.0067	1.0321	0.27	
121	869+70.000	870+20.000	0.0095	0.254	0.495	0.0098	0.0054	0.0037	0.0044	0.0191	0.0099	0.0063	0.0092	-0.0093	-0.0045	-0.0026	-0.0048	1.0321	0.27	
122	870+20.000	881+80.000	0.2197	11.597	11.497	0.4460	0.3089	0.2109	0.1371	0.4422	0.2293	0.1465	0.2129	0.0039	0.0796	0.0644	-0.0758	2.0302	0.52	
123	881+80.000	882+31.000	0.0097	0.259	0.505	0.0100	0.0055	0.0037	0.0045	0.0194	0.0101	0.0064	0.0094	-0.0095	-0.0046	-0.0027	-0.0049	1.0321	0.27	
124	882+31.000	883+00.000	0.0131	0.351	0.684	0.0135	0.0074	0.0051	0.0061	0.0263	0.0136	0.0087	0.0127	-0.0128	-0.0062	-0.0037	-0.0066	1.0321	0.27	
125	883+00.000	887+90.000	0.0928	8.192	4.856	0.3151	0.2475	0.1689	0.0676	0.1868	0.0968	0.0619	0.0899	0.1283	0.1506	0.1070	-0.0223	3.3950	0.88	
126	887+90.000	888+20.000	0.0057	0.154	0.303	0.0059	0.0033	0.0022	0.0027	0.0117	0.0060	0.0039	0.0056	-0.0057	-0.0028	-0.0016	-0.0030	1.0426	0.27	
127	888+20.000	889+30.000	0.0208	0.805	1.826	0.0310	0.0185	0.0113	0.0124	0.0702	0.0418	0.0226	0.0284	-0.0393	-0.0233	-0.0113	-0.0160	1.4857	0.38	
128	889+30.000	889+50.000	0.0038	0.103	0.202	0.0039	0.0022	0.0015	0.0018	0.0078	0.0040	0.0026	0.0037	-0.0038	-0.0019	-0.0011	-0.0020	1.0426	0.27	
129	889+50.000	894+50.000	0.0947	2.541	4.955	0.0977	0.0538	0.0367	0.0440	0.1906	0.0988	0.0632	0.0918	-0.0929	-0.0451	-0.0265	-0.0478	1.0321	0.27	
130	894+50.000	895+15.000	0.0123	0.330	0.644	0.0127	0.0070	0.0048	0.0057	0.0248	0.0128	0.0082	0.0119	-0.0121	-0.0059	-0.0034	-0.0062	1.0321	0.27	
131	895+15.000	895+60.000	0.0085	0.229	0.446	0.0088	0.0048	0.0033	0.0040	0.0172	0.0089	0.0057	0.0083	-0.0084	-0.0041	-0.0024	-0.0043	1.0321	0.27	
132	895+60.000	898+00.000	0.0455	1.220	2.379	0.0469	0.0258	0.0176	0.0211	0.0915	0.0474	0.0303	0.0441	-0.0446	-0.0216	-0.0127	-0.0229	1.0321	0.27	
133	898+00.000	906+70.000	0.1648	4.422	8.623	0.1701	0.0936	0.0639	0.0765	0.3316	0.1719	0.1099	0.1597	-0.1616	-0.0784	-0.0460	-0.0832	1.0321	0.27	
134	906+70.000	907+21.000	0.0097	0.259	0.505	0.0100	0.0055	0.0037	0.0045	0.0194	0.0101	0.0064	0.0094	-0.0095	-0.0046	-0.0027	-0.0049	1.0321	0.27	
135	907+21.000	907+80.000	0.0112	0.300	0.585	0.0115	0.0063	0.0043	0.0052	0.0225	0.0117	0.0075	0.0108	-0.0110	-0.0053	-0.0031	-0.0056	1.0321	0.27	
136	907+80.000	907+90.000	0.0019	0.051	0.099	0.0020	0.0011	0.0007	0.0009	0.0038	0.0020	0.0013	0.0018	-0.0019	-0.0009	-0.0005	-0.0010	1.0321	0.27	
137	907+90.000	913+70.000	0.1098	2.948	5.748	0.1134	0.0624	0.0426	0.0510	0.2211	0.1146	0.0733	0.1065	-0.1077	-0.0523	-0.0307	-0.0555	1.0321	0.27	
138	913+70.000	914+00.000	0.0057	0.154	0.303	0.0059	0.0033	0.0022	0.0027	0.0117	0.0060	0.0039	0.0056	-0.0057	-0.0028	-0.0016	-0.0030	1.0426	0.27	
139	914+00.000	914+30.000	0.0057	0.119	0.234	0.0046	0.0025	0.0017	0.0021	0.0090	0.0048	0.0031	0.0042	-0.0044	-0.0023	-0.0014	-0.0022	0.8027	0.27	
140	914+30.000	914+40.000	0.0019	0.054	0.124	0.0021	0.0013	0.0008	0.0008	0.0048	0.0029	0.0016	0.0019	-0.0027	-0.0016	-0.0009	-0.0010	1.1072	0.37	
141	914+40.000	915+40.000	0.0189	0.584	1.455	0.0225	0.0133	0.0081	0.0091	0.0560	0.0340	0.0191	0.0219	-0.0335	-0.0207	-0.0110	-0.0128	1.1855	0.39	
LaMesa/SD38 (v1)	915+00.000			45.389	83.561	1.7457	0.7046	0.4318	1.0411	3.2139	1.8143	0.9753	1.3996	-1.4682	-1.1097	-0.5434	-0.3585			0.47
142	915+40.000	916+00.000	0.0114	0.237	0.467	0.0091	0.0050	0.0034	0.0041	0.0180	0.0095	0.0062	0.0084	-0.0088	-0.0045	-0.0028	-0.0043	0.8027	0.27	
143	916+00.000	921+00.000	0.0947	1.957	3.816	0.0753	0.0414	0.0283	0.0339	0.1467	0.0779	0.0509	0.0689	-0.0715	-0.0365	-0.0226	-0.0350	0.7947	0.26	
144	921+00.000	921+90.000	0.0170	0.352	0.687	0.0135	0.0075	0.0051	0.0061	0.0264	0.0140	0.0092	0.0124	-0.0129	-0.0066	-0.0041	-0.0063	0.7947	0.26	
145	921+90.000	922+00.000	0.0019	0.039	0.076	0.0015	0.0008	0.0006	0.0007	0.0029	0.0016	0.0010	0.0014	-0.0014	-0.0007	-0.0005	-0.0007	0.7947	0.26	
146	922+00.000	922+59.000	0.0112	0.231	0.450	0.0089	0.0049	0.0033	0.0040	0.0173	0.0092	0.0060	0.0081	-0.0084	-0.0043	-0.0027	-0.0041	0.7947	0.26	
147	922+59.000	923+00.000	0.0078	0.160	0.313	0.0062	0.0034	0.0023	0.0028	0.0120	0.0064	0.0042	0.0056	-0.0059	-0.0030	-0.0019	-0.0029	0.7947	0.26	
148	923+00.000	941+70.000	0.3542	11.707	14.270	0.4503	0.2929	0.2000	0.1573	0.5488	0.2913	0.1902	0.2576	-0.0986	0.0017	0.0098	-0.1002	1.2714	0.42	
149	941+70.000	948+50.000	0.1288	2.661	5.189	0.1023	0.0563	0.0384	0.0460	0.1996	0.1059	0.0692	0.0937	-0.0972	-0.0496	-0.0307	-0.0476	0.7947	0.26	
All Segments			6.8845	404.014	364.690	15.5390	8.4321	5.7418	7.1069	14.0265	7.3373	4.6326	6.6892	1.5125	1.0948	1.1092	0.4176	2.2571	0.60	
All Intersections				207.530	423.640	7.9819	3.7433	2.1827	4.2387	16.2938	8.2091	4.3625	8.0847	-8.3119	-4.4659	-2.1798	-3.8461			0.25
Total			6.8845	611.544	788.330	23.5209	12.1754	7.9245	11.3456	30.3204	15.5464	8.9951	14.7740	-6.7994	-3.3710	-1.0706	-3.4284	3.4165		

Table 12. Expected Crash Frequencies and Rates by Horizontal Design Element (Section 3)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected FI no/C Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted FI no/C Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) FI no/C Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)
Tangent	585+00.000	594+84.940	0.1865	12.915	11.070	0.4967	0.3578	0.2468	0.1390	0.4258	0.2184	0.1382	0.2074	0.0709	0.1394	0.1086	-0.0684	2.6628	0.61
Simple Curve 1	594+84.940	609+21.930	0.2722	36.520	19.110	1.4046	0.5861	0.4032	0.8185	0.7350	0.3769	0.2321	0.3581	0.6696	0.2092	0.1711	0.4604	5.1611	0.97
Tangent	609+21.930	624+64.300	0.2921	20.697	21.970	0.7960	0.3292	0.2271	0.4668	0.8450	0.4243	0.2633	0.4207	-0.0490	-0.0951	-0.0362	0.0461	2.7250	0.50
Simple Curve 2	624+64.300	624+64.530	0.0000	0.003	0.003	0.0001	0.0001	0.0000	0.0001	0.0001	0.0001	0.0000	0.0001	0.0000	-0.0000	-0.0000	0.0000	3.0350	0.56
Tangent	624+64.530	636+92.820	0.2326	9.543	17.496	0.3670	0.2038	0.1406	0.1632	0.6729	0.3379	0.2097	0.3350	-0.3059	-0.1341	-0.0691	-0.1718	1.5777	0.29
Simple Curve 3	636+92.820	647+26.050	0.1957	17.252	16.240	0.6635	0.2379	0.1621	0.4257	0.6246	0.3222	0.1928	0.3024	0.0389	-0.0844	-0.0307	0.1233	3.3907	0.62
Tangent	647+26.050	672+86.110	0.4849	37.690	37.458	1.4496	0.5640	0.3876	0.8857	1.4407	0.7292	0.4477	0.7114	0.0089	-0.1653	-0.0601	0.1742	2.9897	0.55
Simple Curve 4	672+86.110	683+82.710	0.2077	73.238	15.648	2.8169	1.9911	1.3396	0.8258	0.6019	0.3216	0.1899	0.2802	2.2150	1.6694	1.1497	0.5456	13.5629	2.53
Tangent	683+82.710	693+85.010	0.1898	5.134	9.377	0.1975	0.1100	0.0761	0.0875	0.3607	0.1883	0.1212	0.1723	-0.1632	-0.0784	-0.0451	-0.0848	1.0402	0.29
Simple Curve 5	693+85.010	710+47.850	0.3149	8.065	15.977	0.3102	0.1748	0.1177	0.1354	0.6145	0.3344	0.2088	0.2801	-0.3043	-0.1596	-0.0911	-0.1447	0.9849	0.30
Tangent	710+47.850	727+51.450	0.3227	19.279	12.636	0.7415	0.3343	0.2282	0.4072	0.4860	0.2585	0.1691	0.2275	0.2555	0.0758	0.0590	0.1798	2.2982	0.78
Simple Curve 6	727+51.450	727+52.350	0.0002	0.003	0.007	0.0001	0.0001	0.0000	0.0001	0.0003	0.0001	0.0001	0.0001	-0.0001	-0.0001	-0.0000	-0.0001	0.7724	0.26
Tangent	727+52.350	765+52.550	0.7197	14.661	28.827	0.5639	0.3116	0.2115	0.2523	1.1087	0.5947	0.3856	0.5140	-0.5448	-0.2832	-0.1742	-0.2617	0.7835	0.27
Simple Curve 7	765+52.550	780+45.930	0.2828	10.095	11.536	0.3883	0.1595	0.1080	0.2288	0.4437	0.2396	0.1542	0.2041	-0.0554	-0.0801	-0.0462	0.0247	1.3728	0.47
Tangent	780+45.930	948+50.000	3.1826	138.918	147.333	5.3430	3.0722	2.0932	2.2708	5.6667	2.9909	1.9197	2.6757	-0.3237	0.0812	0.1734	-0.4049	1.6788	0.50

Table 13. Predicted Crash Frequencies by Year (Section 3)

Year	Total Crashes	FI Crashes	Percent FI (%)	FI/no C Crashes	Percent FI/no C (%)	PDO Crashes	Percent PDO (%)
2025	16.61	8.54	51.412	5.36	32.278	8.07	48.588
2026	18.30	9.37	51.224	5.83	31.866	8.93	48.776
2027	20.01	10.22	51.059	6.30	31.488	9.79	48.941
2028	21.74	11.07	50.913	6.77	31.141	10.67	49.087
2029	23.49	11.93	50.784	7.24	30.818	11.56	49.216
2030	24.14	12.26	50.776	7.41	30.696	11.88	49.224
2031	24.80	12.59	50.771	7.58	30.578	12.21	49.229
2032	25.47	12.93	50.767	7.76	30.463	12.54	49.233
2033	26.13	13.27	50.765	7.93	30.352	12.87	49.235
2034	26.80	13.60	50.764	8.11	30.245	13.19	49.236
2035	27.47	13.94	50.765	8.28	30.141	13.52	49.235
2036	28.23	14.34	50.805	8.48	30.035	13.89	49.195
2037	29.03	14.77	50.865	8.69	29.930	14.26	49.135
2038	29.82	15.19	50.922	8.90	29.828	14.64	49.078
2039	30.62	15.61	50.978	9.10	29.731	15.01	49.022
2040	31.42	16.03	51.033	9.31	29.636	15.38	48.967
2041	32.75	16.75	51.158	9.65	29.478	15.99	48.842
2042	34.05	17.46	51.279	9.98	29.327	16.59	48.721
2043	35.32	18.15	51.394	10.31	29.185	17.17	48.606
2044	36.58	18.84	51.504	10.63	29.048	17.74	48.496
2045	37.83	19.52	51.609	10.94	28.918	18.31	48.391
2046	39.08	20.21	51.711	11.25	28.792	18.87	48.289
2047	40.31	20.89	51.808	11.56	28.672	19.43	48.192
2048	41.55	21.57	51.903	11.86	28.555	19.98	48.097
2049	42.78	22.24	51.993	12.17	28.443	20.54	48.007
2050	44.01	22.92	52.081	12.47	28.335	21.09	47.919
Total	788.33	404.21	51.274	233.87	29.667	384.12	48.726
Average	30.32	15.55	51.274	8.99	29.667	14.77	48.726

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 14. Expected Crash Frequencies by Year (Section 3)

Year	Total Crashes	FI Crashes	Percent FI (%)	FI/no C Crashes	Percent FI/no C (%)	PDO Crashes	Percent PDO (%)
2025	12.89	6.69	51.904	4.72	36.657	6.20	48.099
2026	14.20	7.34	51.714	5.14	36.189	6.86	48.285
2027	15.52	8.00	51.547	5.55	35.760	7.52	48.449
2028	16.86	8.67	51.400	5.96	35.365	8.19	48.593
2029	18.22	9.34	51.269	6.38	34.999	8.88	48.721
2030	18.73	9.60	51.262	6.53	34.860	9.13	48.729
2031	19.24	9.86	51.256	6.68	34.726	9.38	48.734
2032	19.76	10.12	51.252	6.83	34.595	9.63	48.738
2033	20.27	10.39	51.250	6.99	34.469	9.88	48.740
2034	20.79	10.65	51.249	7.14	34.347	10.13	48.740
2035	21.31	10.92	51.250	7.29	34.229	10.39	48.740
2036	21.90	11.23	51.291	7.47	34.109	10.66	48.700
2037	22.52	11.56	51.351	7.65	33.990	10.95	48.641
2038	23.14	11.89	51.409	7.84	33.875	11.24	48.584
2039	23.75	12.22	51.466	8.02	33.764	11.53	48.528
2040	24.37	12.56	51.520	8.20	33.656	11.81	48.475
2041	25.40	13.12	51.647	8.50	33.476	12.28	48.351
2042	26.41	13.67	51.769	8.80	33.306	12.74	48.231
2043	27.40	14.22	51.885	9.08	33.144	13.18	48.117
2044	28.38	14.76	51.996	9.36	32.989	13.62	48.008
2045	29.35	15.29	52.103	9.64	32.840	14.06	47.904
2046	30.31	15.82	52.205	9.91	32.698	14.49	47.803
2047	31.27	16.36	52.304	10.18	32.561	14.92	47.707
2048	32.23	16.89	52.399	10.45	32.429	15.35	47.614
2049	33.19	17.42	52.490	10.72	32.302	15.77	47.524
2050	34.14	17.95	52.579	10.99	32.179	16.20	47.437
Total	611.54	316.56	51.764	206.04	33.691	294.99	48.236
Average	23.52	12.18	51.764	7.92	33.691	11.35	48.236

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 15. Comparing Predicted and Expected Crashes for the Evaluation Period (Section 3)

Scope	Total Crashes	FI Crashes	Percent FI (%)	FI/no C Crashes	Percent FI/no C (%)	PDO Crashes	Percent PDO (%)
Predicted	788.33	404.21	51.274	233.87	29.667	384.12	48.726
Expected	611.54	316.56	51.764	206.04	33.691	294.99	48.236
Expected - Predicted	-176.78	-87.65		-27.84		-89.14	
Percent Difference	-28.91	-27.69		-13.51		-30.22	

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 16. Expected Crash Severity by Ramp Terminal or Roundabout (Section 3)

Seg. No.	Type	Fatal (K) Crashes (crashes)	Incapacitating Injury (A) Crashes (crashes)	Non-Incapacitating Injury (B) Crashes (crashes)	Possible Injury (C) Crashes (crashes)	No Injury (O) Crashes (crashes)
4	FRERampTerminal	0.0941	0.4938	1.6335	5.7300	7.7191

Table 17. Expected Crash Type Distribution (Section 3)

Element Type	Crash Type	FI Crashes	Percent FI (%)	FI/no C Crashes	Percent FI/no C (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Single	150.43	24.6	110.75	18.1	143.73	23.5	298.08	48.8
Highway Segment	Total Single Vehicle Crashes	150.43	24.6	110.75	18.1	143.73	23.5	298.08	48.8
Highway Segment	Angle Collision	16.09	2.6	10.16	1.7	9.07	1.5	24.58	4.0
Highway Segment	Head-on Collision	3.14	0.5	2.97	0.5	0.36	0.1	2.49	0.4
Highway Segment	Rear-end Collision	38.33	6.3	18.19	3.0	16.88	2.8	49.86	8.2
Highway Segment	Sideswipe	6.30	1.0	3.54	0.6	10.11	1.7	18.64	3.0
Highway Segment	Total Multiple Vehicle Crashes	63.87	10.4	34.86	5.7	36.42	6.0	95.56	15.6
Highway Segment	Total Highway Segment Crashes	219.24	35.9	149.29	24.4	184.78	30.2	404.01	66.1
Highway Segment	Other Collision	4.93	0.8	3.67	0.6	4.62	0.8	10.36	1.7
Intersection	Single	13.98	2.3	11.95	2.0	24.92	4.1	39.47	6.5
Intersection	Total Single Vehicle Crashes	13.98	2.3	11.95	2.0	24.92	4.1	39.47	6.5
Intersection	Angle Collision	45.97	7.5	30.94	5.1	28.84	4.7	72.86	11.9
Intersection	Head-on Collision	1.87	0.3	1.53	0.2	1.59	0.3	3.36	0.5
Intersection	Rear-end Collision	19.40	3.2	6.39	1.0	25.46	4.2	45.10	7.4
Intersection	Sideswipe	3.92	0.6	2.40	0.4	16.14	2.6	21.11	3.5
Intersection	Total Multiple Vehicle Crashes	71.17	11.6	41.26	6.7	72.04	11.8	142.42	23.3
Intersection	Total Intersection Crashes	89.45	14.6	56.75	9.3	102.46	16.8	191.69	31.4
Intersection	Other Collision	4.30	0.7	3.54	0.6	5.51	0.9	9.81	1.6
Ramp Terminal	Collision with Animal	0.00	0.0	0.00	0.0	0.00	0.0	0.00	0.0
Ramp Terminal	Collision with Fixed Object	0.62	0.1	0.00	0.0	1.22	0.2	1.84	0.3
Ramp Terminal	Collision with Other Object	0.00	0.0	0.00	0.0	0.04	0.0	0.04	0.0
Ramp Terminal	Other Single-vehicle Collision	0.52	0.1	0.00	0.0	0.20	0.0	0.72	0.1
Ramp Terminal	Collision with Parked Vehicle	0.06	0.0	0.00	0.0	0.12	0.0	0.17	0.0
Ramp Terminal	Total Single Vehicle Crashes	1.19	0.2	0.00	0.0	1.57	0.3	2.77	0.5
Ramp Terminal	Angle Collision	4.15	0.7	0.00	0.0	2.87	0.5	7.02	1.1

Element Type	Crash Type	FI Crashes	Percent FI (%)	FI/no C Crashes	Percent FI/no C (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Ramp Terminal	Head-on Collision	0.16	0.0	0.00	0.0	0.12	0.0	0.28	0.0
Ramp Terminal	Other Multiple-vehicle Collision	0.10	0.0	0.00	0.0	0.20	0.0	0.30	0.1
Ramp Terminal	Rear-end Collision	2.19	0.4	0.00	0.0	2.13	0.3	4.32	0.7
Ramp Terminal	Sideswipe, Same Direction Collision	0.16	0.0	0.00	0.0	0.83	0.1	0.98	0.2
Ramp Terminal	Total Multiple Vehicle Crashes	6.76	1.1	0.00	0.0	6.14	1.0	12.90	2.1
Ramp Terminal	Total Ramp Terminal Crashes	7.95	1.3	0.00	0.0	7.72	1.3	15.67	2.6
	Total Crashes	316.64	51.8	206.04	33.7	294.96	48.2	611.37	100.0

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 18. Evaluation Message

Start Location (Sta. ft)	End Location (Sta. ft)	Message
605+40.000	605+60.000	Warning: for segment #11 (605+40.000 to 605+60.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+40.000	605+60.000	Warning: for segment #11 (605+40.000 to 605+60.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+60.000	605+70.000	Warning: for segment #12 (605+60.000 to 605+70.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+60.000	605+70.000	Warning: for segment #12 (605+60.000 to 605+70.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+70.000	605+75.000	Warning: for segment #13 (605+70.000 to 605+75.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+70.000	605+75.000	Warning: for segment #13 (605+70.000 to 605+75.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+75.000	606+00.000	Warning: for segment #14 (605+75.000 to 606+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+75.000	606+00.000	Warning: for segment #14 (605+75.000 to 606+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
639+00.000	640+00.000	Warning: for segment #29 (639+00.000 to 640+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
639+00.000	640+00.000	Warning: for segment #29 (639+00.000 to 640+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
655+70.000	656+50.000	Warning: for segment #42 (655+70.000 to 656+50.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
655+70.000	656+50.000	Warning: for segment #42 (655+70.000 to 656+50.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
676+30.000	677+50.000	Warning: for segment #52 (676+30.000 to 677+50.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
676+30.000	677+50.000	Warning: for segment #52 (676+30.000 to 677+50.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
681+00.000	682+20.000	Warning: for segment #57 (681+00.000 to 682+20.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
681+00.000	682+20.000	Warning: for segment #57 (681+00.000 to 682+20.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
699+20.000	700+40.000	Warning: for segment #67 (699+20.000 to 700+40.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
699+20.000	700+40.000	Warning: for segment #67 (699+20.000 to 700+40.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
709+00.000	710+30.000	Warning: for segment #76 (709+00.000 to 710+30.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
709+00.000	710+30.000	Warning: for segment #76 (709+00.000 to 710+30.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
755+50.000	756+90.000	Warning: for segment #82 (755+50.000 to 756+90.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
755+50.000	756+90.000	Warning: for segment #82 (755+50.000 to 756+90.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
777+80.000	778+80.000	Warning: for segment #89 (777+80.000 to 778+80.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
777+80.000	778+80.000	Warning: for segment #89 (777+80.000 to 778+80.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
808+80.000	809+00.000	Warning: for segment #102 (808+80.000 to 809+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
808+80.000	809+00.000	Warning: for segment #102 (808+80.000 to 809+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
809+00.000	809+60.000	Warning: for segment #103 (809+00.000 to 809+60.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
809+00.000	809+60.000	Warning: for segment #103 (809+00.000 to 809+60.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
861+85.000	862+00.000	Warning: for segment #115 (861+85.000 to 862+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
861+85.000	862+00.000	Warning: for segment #115 (861+85.000 to 862+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0

Start Location (Sta. ft)	End Location (Sta. ft)	Message
862+00.000	862+50.000	Warning: for segment #116 (862+00.000 to 862+50.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
862+00.000	862+50.000	Warning: for segment #116 (862+00.000 to 862+50.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
862+50.000	862+60.000	Warning: for segment #117 (862+50.000 to 862+60.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
862+50.000	862+60.000	Warning: for segment #117 (862+50.000 to 862+60.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
888+20.000	889+30.000	Warning: for segment #127 (888+20.000 to 889+30.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
888+20.000	889+30.000	Warning: for segment #127 (888+20.000 to 889+30.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
914+30.000	914+40.000	Warning: for segment #140 (914+30.000 to 914+40.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
914+30.000	914+40.000	Warning: for segment #140 (914+30.000 to 914+40.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
914+40.000	915+40.000	Warning: for segment #141 (914+40.000 to 915+40.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
914+40.000	915+40.000	Warning: for segment #141 (914+40.000 to 915+40.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+40.000	605+60.000	Warning: for segment #11 (605+40.000 to 605+60.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+40.000	605+60.000	Warning: for segment #11 (605+40.000 to 605+60.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+60.000	605+70.000	Warning: for segment #12 (605+60.000 to 605+70.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+60.000	605+70.000	Warning: for segment #12 (605+60.000 to 605+70.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+70.000	605+75.000	Warning: for segment #13 (605+70.000 to 605+75.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+70.000	605+75.000	Warning: for segment #13 (605+70.000 to 605+75.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
605+75.000	606+00.000	Warning: for segment #14 (605+75.000 to 606+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
605+75.000	606+00.000	Warning: for segment #14 (605+75.000 to 606+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
639+00.000	640+00.000	Warning: for segment #29 (639+00.000 to 640+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
639+00.000	640+00.000	Warning: for segment #29 (639+00.000 to 640+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
655+70.000	656+50.000	Warning: for segment #42 (655+70.000 to 656+50.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
655+70.000	656+50.000	Warning: for segment #42 (655+70.000 to 656+50.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
676+30.000	677+50.000	Warning: for segment #52 (676+30.000 to 677+50.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
676+30.000	677+50.000	Warning: for segment #52 (676+30.000 to 677+50.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
681+00.000	682+20.000	Warning: for segment #57 (681+00.000 to 682+20.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
681+00.000	682+20.000	Warning: for segment #57 (681+00.000 to 682+20.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
699+20.000	700+40.000	Warning: for segment #67 (699+20.000 to 700+40.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
699+20.000	700+40.000	Warning: for segment #67 (699+20.000 to 700+40.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
709+00.000	710+30.000	Warning: for segment #76 (709+00.000 to 710+30.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
709+00.000	710+30.000	Warning: for segment #76 (709+00.000 to 710+30.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
755+50.000	756+90.000	Warning: for segment #82 (755+50.000 to 756+90.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
755+50.000	756+90.000	Warning: for segment #82 (755+50.000 to 756+90.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0

Start Location (Sta. ft)	End Location (Sta. ft)	Message
777+80.000	778+80.000	Warning: for segment #89 (777+80.000 to 778+80.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
777+80.000	778+80.000	Warning: for segment #89 (777+80.000 to 778+80.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
808+80.000	809+00.000	Warning: for segment #102 (808+80.000 to 809+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
808+80.000	809+00.000	Warning: for segment #102 (808+80.000 to 809+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
809+00.000	809+60.000	Warning: for segment #103 (809+00.000 to 809+60.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
809+00.000	809+60.000	Warning: for segment #103 (809+00.000 to 809+60.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
861+85.000	862+00.000	Warning: for segment #115 (861+85.000 to 862+00.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
861+85.000	862+00.000	Warning: for segment #115 (861+85.000 to 862+00.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
862+00.000	862+50.000	Warning: for segment #116 (862+00.000 to 862+50.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
862+00.000	862+50.000	Warning: for segment #116 (862+00.000 to 862+50.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
862+50.000	862+60.000	Warning: for segment #117 (862+50.000 to 862+60.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
862+50.000	862+60.000	Warning: for segment #117 (862+50.000 to 862+60.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
888+20.000	889+30.000	Warning: for segment #127 (888+20.000 to 889+30.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
888+20.000	889+30.000	Warning: for segment #127 (888+20.000 to 889+30.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
914+30.000	914+40.000	Warning: for segment #140 (914+30.000 to 914+40.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
914+30.000	914+40.000	Warning: for segment #140 (914+30.000 to 914+40.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0
914+40.000	915+40.000	Warning: for segment #141 (914+40.000 to 915+40.000), no foreslope data available for left side of road for use by AFM3ru, using 1.0
914+40.000	915+40.000	Warning: for segment #141 (914+40.000 to 915+40.000), no foreslope data available for right side of road for use by AFM3ru, using 1.0

Section 4 Evaluation

Section: Section 4
Evaluation Start Location: 948+50.000
Evaluation End Location: 974+11.000
Area Type: Urban
Functional Class: Arterial
Type of Alignment: Undivided, Multilane
Model Category: Urban/Suburban Arterial
Calibration Factor: 4D=1.0; 4SG=1.0; 4U=1.0;

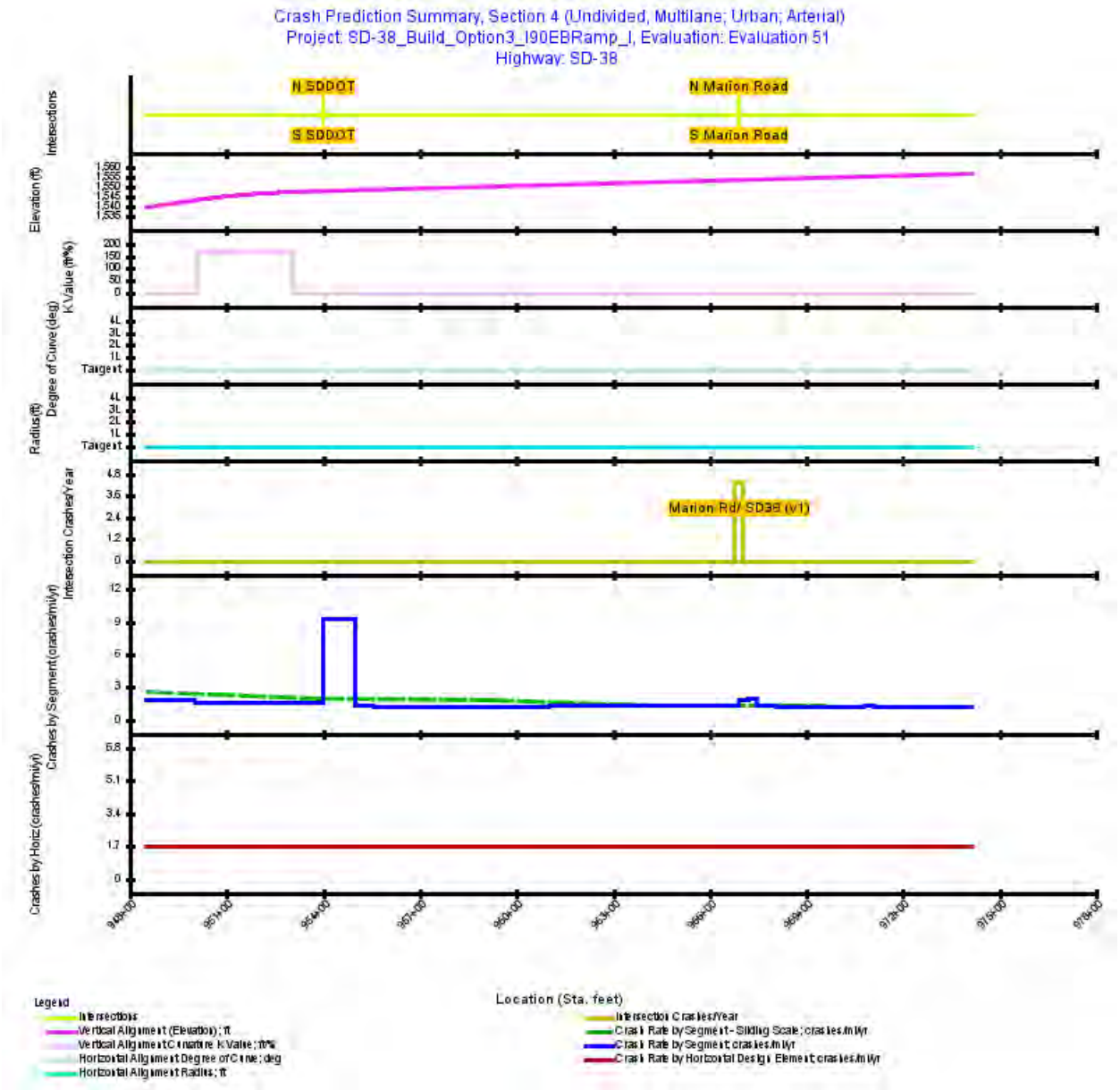


Figure 2. Crash Prediction Summary (Section 4)

Table 19. Observed Crashes Used in the Evaluation (Section 4)

Year	Observed Crashes	Total Crashes Used	FI Crashes	FI no/C Crashes	PDO Crashes
2018	5	5	4	0	1
2019	1	1	0	0	1
2020	2	2	0	0	2
2021	2	2	2	0	0
2022	2	2	0	0	2
All Years	12 [1]	12	6	0	6

Footnotes

[1] Note: Observed crash data that does not comply with the associated CPM model requirements may not be used in EB processing.

Table 20. Evaluation Highway - Homogeneous Segments (Section 4)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industial/Institutional	Number Minor Industial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
150	Urban/Suburban Arterial Segment Four-lane Undivided	948+50.000	950+00.000	150.00	0.0284	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/High	0	8.00	12.00
151	Urban/Suburban Arterial Segment Four-lane Undivided	950+00.000	954+00.000	400.00	0.0758	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/High	0	8.00	12.00
152	Urban/Suburban Arterial Segment Four-lane Undivided	954+00.000	955+00.000	100.00	0.0189	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	2	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/High	0	4.00	12.00
153	Urban/Suburban Arterial Segment Four-lane Divided	955+00.000	955+55.000	55.00	0.0104	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	4.01	Non-Traversable Median	4.01	Intermediate/High	0	8.00	12.00
154	Urban/Suburban Arterial Segment Four-lane Divided	955+55.000	958+28.000	273.00	0.0517	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	10.02	Non-Traversable Median	10.02	Intermediate/High	0	8.00	12.00
155	Urban/Suburban Arterial Segment Four-lane Divided	958+28.000	961+01.000	273.00	0.0517	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	20.03	Non-Traversable Median	19.99	Intermediate/High	0	8.00	12.00
156	Urban/Suburban Arterial Segment Four-lane Divided	961+01.000	962+00.000	99.00	0.0187	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	23.12	Traversable Median	23.12	Intermediate/High	0	8.00	12.00
157	Urban/Suburban Arterial Segment Four-lane Divided	962+00.000	963+69.000	169.00	0.0320	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	18.13	Traversable Median	30.13	Intermediate/High	0	8.00	12.00
158	Urban/Suburban Arterial Segment Four-lane Divided	963+69.000	965+00.000	131.00	0.0248	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	12.55	Traversable Median	24.55	Intermediate/High	0	8.00	12.00
159	Urban/Suburban Arterial Segment Four-lane Divided	965+00.000	966+38.000	138.00	0.0261	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	7.54	Traversable Median	19.54	Intermediate/High	0	4.00	12.00
160	Urban/Suburban Arterial Segment Four-lane Divided	966+38.000	966+70.000	32.00	0.0061	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	4.38	Traversable Median	16.38	Intermediate/High	0	4.00	12.00

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industial/Institutional	Number Minor Industial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
161	Urban/Suburban Arterial Segment Four-lane Divided	966+70.000	966+91.000	21.00	0.0040	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	3.39	Traversable Median	15.39	Intermediate/High	0	0.00	12.00
162	Urban/Suburban Arterial Segment Four-lane Undivided	966+91.000	967+14.000	23.00	0.0044	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	true	false	0.0	0.00	None	0.00	Intermediate/High	0	0.00	12.00
163	Urban/Suburban Arterial Segment Four-lane Undivided	967+14.000	967+20.000	6.00	0.0011	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	true	false	0.0	0.00	None	0.00	Intermediate/High	0	8.00	12.00
164	Urban/Suburban Arterial Segment Four-lane Undivided	967+20.000	967+45.000	25.00	0.0047	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/High	0	8.00	12.00
165	Urban/Suburban Arterial Segment Four-lane Divided	967+45.000	968+06.000	61.00	0.0116	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	4.01	Non-Traversable Median	18.01	Intermediate/High	0	8.00	12.00
166	Urban/Suburban Arterial Segment Four-lane Divided	968+06.000	970+79.000	273.00	0.0517	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	9.52	Non-Traversable Median	23.52	Intermediate/High	0	8.00	12.00
167	Urban/Suburban Arterial Segment Four-lane Divided	970+79.000	971+09.000	30.00	0.0057	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	14.53	Non-Traversable Median	14.53	Intermediate/High	0	8.00	12.00
168	Urban/Suburban Arterial Segment Four-lane Divided	971+09.000	974+11.000	302.00	0.0572	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	0	0	0	0	0	0	0	false	false	0.0	20.01	Non-Traversable Median	20.01	Intermediate/High	0	8.00	12.00

Table 21. Crash Highway Highway - Homogeneous Segments (Section 4)

Seg. No.	Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Number Major Commercial Driveways	Number Minor Commercial Driveways	Number Major Industial/Institutional	Number Minor Industial/Institutional	Number Major Residential Driveways	Number Minor Residential Driveways	Number Other Driveways	Lighting	Automated Speed Enforcement	Density (fixed objects/mi)	Median Width (ft)	Type	Effective Median Width (ft)	Speed Level	Number Rail Highway Crossings	Average Shoulder Width (ft)	Average Lane Width (ft)
150	Urban/Suburban Arterial Segment Four-lane Undivided	948+50.000	950+00.000	150.00	0.0284	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/ High	0	8.00	12.00
151	Urban/Suburban Arterial Segment Four-lane Undivided	950+00.000	954+00.000	400.00	0.0758	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/ High	0	8.00	12.00
152	Urban/Suburban Arterial Segment Four-lane Undivided	954+00.000	955+00.000	100.00	0.0189	2018-2022: 4,900	0	0	2	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/ High	0	4.00	12.00
153	Urban/Suburban Arterial Segment Four-lane Divided	955+00.000	955+55.000	55.00	0.0104	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	4.01	Non-Traversable Median	4.01	Intermediate/ High	0	8.00	12.00
154	Urban/Suburban Arterial Segment Four-lane Divided	955+55.000	958+28.000	273.00	0.0517	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	10.02	Non-Traversable Median	10.02	Intermediate/ High	0	8.00	12.00
155	Urban/Suburban Arterial Segment Four-lane Divided	958+28.000	961+01.000	273.00	0.0517	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	20.03	Non-Traversable Median	19.99	Intermediate/ High	0	8.00	12.00
156	Urban/Suburban Arterial Segment Four-lane Divided	961+01.000	962+00.000	99.00	0.0187	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	23.12	Traversable Median	23.12	Intermediate/ High	0	8.00	12.00
157	Urban/Suburban Arterial Segment Four-lane Divided	962+00.000	963+69.000	169.00	0.0320	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	18.13	Traversable Median	30.13	Intermediate/ High	0	8.00	12.00
158	Urban/Suburban Arterial Segment Four-lane Divided	963+69.000	965+00.000	131.00	0.0248	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	12.55	Traversable Median	24.55	Intermediate/ High	0	8.00	12.00
159	Urban/Suburban Arterial Segment Four-lane Divided	965+00.000	966+38.000	138.00	0.0261	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	7.54	Traversable Median	19.54	Intermediate/ High	0	4.00	12.00
160	Urban/Suburban Arterial Segment Four-lane Divided	966+38.000	966+70.000	32.00	0.0061	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	4.38	Traversable Median	16.38	Intermediate/ High	0	4.00	12.00
161	Urban/Suburban Arterial Segment Four-lane Divided	966+70.000	966+91.000	21.00	0.0040	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	3.39	Traversable Median	15.39	Intermediate/ High	0	0.00	12.00
162	Urban/Suburban Arterial Segment Four-lane Undivided	966+91.000	967+14.000	23.00	0.0044	2018-2022: 4,900	0	0	0	0	0	0	0	true	false	0.0	0.00	None	0.00	Intermediate/ High	0	0.00	12.00
163	Urban/Suburban Arterial Segment Four-lane Undivided	967+14.000	967+20.000	6.00	0.0011	2018-2022: 4,900	0	0	0	0	0	0	0	true	false	0.0	0.00	None	0.00	Intermediate/ High	0	8.00	12.00
164	Urban/Suburban Arterial Segment Four-lane Undivided	967+20.000	967+45.000	25.00	0.0047	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	0.00	None	0.00	Intermediate/ High	0	8.00	12.00
165	Urban/Suburban Arterial Segment Four-lane Divided	967+45.000	968+06.000	61.00	0.0116	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	4.01	Non-Traversable Median	18.01	Intermediate/ High	0	8.00	12.00
166	Urban/Suburban Arterial Segment Four-lane Divided	968+06.000	970+79.000	273.00	0.0517	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	9.52	Non-Traversable Median	23.52	Intermediate/ High	0	8.00	12.00
167	Urban/Suburban Arterial Segment Four-lane Divided	970+79.000	971+09.000	30.00	0.0057	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	14.53	Non-Traversable Median	14.53	Intermediate/ High	0	8.00	12.00
168	Urban/Suburban Arterial Segment Four-lane Divided	971+09.000	974+11.000	302.00	0.0572	2018-2022: 4,900	0	0	0	0	0	0	0	false	false	0.0	20.01	Non-Traversable Median	20.01	Intermediate/ High	0	8.00	12.00

Table 22. Evaluation Intersection (Section 4)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/ day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
8	Marion Rd/ SD38 (v1)	Urban/Suburban Arterial Intersection Four-Legged Signalized	966+91.000	2025: 5,766; 2026: 5,888; 2027: 6,010; 2028: 6,132; 2029: 6,255; 2030: 6,660; 2031: 7,065; 2032: 7,470; 2033: 7,875; 2034: 8,280; 2035: 8,685; 2036: 9,090; 2037: 9,495; 2038: 9,900; 2039: 10,305; 2040: 10,710; 2041: 11,861; 2042: 13,012; 2043: 14,163; 2044: 15,314; 2045: 16,465; 2046: 17,616; 2047: 18,767; 2048: 19,918; 2049: 21,069; 2050: 22,220	2025: 5,988; 2026: 6,351; 2027: 6,714; 2028: 7,077; 2029: 7,440; 2030: 7,545; 2031: 7,650; 2032: 7,756; 2033: 7,861; 2034: 7,967; 2035: 8,072; 2036: 8,178; 2037: 8,283; 2038: 8,389; 2039: 8,494; 2040: 8,600; 2041: 8,722; 2042: 8,844; 2043: 8,966; 2044: 9,088; 2045: 9,210; 2046: 9,332; 2047: 9,454; 2048: 9,576; 2049: 9,698; 2050: 9,820	4	Signalized	4	3	0	20	false	false	false	0	0	6

Table 23. Crash History Intersection (Section 4)

Inter. No.	Title	Type	Location (Sta. ft)	Major AADT	Minor AADT	Legs	Traffic Control	Approaches w/Left Turn Lanes	Approaches w/Right Turn Lanes	Approaches w/o Right Turn on Red	Pedestrian Volume (crossings/day)	Lighted at Night	Red Light Camera	School Nearby	Number of Bus Stops	Number of Alcohol Sales Establishments	Max Lanes Crossed
8	Marion Rd/ SD38 (v1)	Urban/Suburban Arterial Intersection Four-Legged Signalized	966+91.000	2018-2022: 5,400	2018-2022: 4,900	4	Signalized	4	3	0	20	false	false	false	0	0	6

Table 24. Expected Highway Crash Rates and Frequencies Summary (Section 4)

First Year of Analysis	**2025**
Last Year of Analysis	**2050**
Evaluated Length (mi)	**0.4850**
Average Future Road AADT (vpd)	**8,272**
Expected Crashes	
Total Crashes	**135.85**
Fatal and Injury Crashes	**46.51**
Property-Damage-Only Crashes	**89.34**
Percent of Total Expected Crashes	
Percent Fatal and Injury Crashes (%)	**34**
Percent Property-Damage-Only Crashes (%)	**66**
Expected Crash Rate	
Crash Rate (crashes/mi/yr)	**10.7725**
FI Crash Rate (crashes/mi/yr)	**3.6878**
PDO Crash Rate (crashes/mi/yr)	**7.0847**
Expected Travel Crash Rate	
Total Travel (million veh-mi)	**38.08**
Travel Crash Rate (crashes/million veh-mi)	**3.57**
Travel FI Crash Rate (crashes/million veh-mi)	**1.22**
Travel PDO Crash Rate (crashes/million veh-mi)	**2.35**

Table 25. Expected Crash Frequencies and Rates by Highway Segment/Intersection (Section 4)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)	Expected Intersection Travel Crash Rate (crashes/million veh)
150	948+50.000	950+00.000	0.0284	1.343	1.459	0.0517	0.0179	0.0337	0.0561	0.0181	0.0380	-0.0044	-0.0001	-0.0043	1.8184	0.60	
151	950+00.000	954+00.000	0.0758	3.172	3.889	0.1220	0.0437	0.0783	0.1496	0.0481	0.1014	-0.0276	-0.0044	-0.0232	1.6103	0.53	
152	954+00.000	955+00.000	0.0189	4.560	6.162	0.1754	0.0651	0.1103	0.2370	0.0817	0.1553	-0.0616	-0.0167	-0.0449	9.2608	3.07	
153	955+00.000	955+55.000	0.0104	0.373	0.382	0.0143	0.0039	0.0104	0.0147	0.0039	0.0108	-0.0004	-0.0000	-0.0003	1.3757	0.46	
154	955+55.000	958+28.000	0.0517	1.685	1.897	0.0648	0.0182	0.0466	0.0730	0.0195	0.0535	-0.0082	-0.0013	-0.0069	1.2532	0.42	
155	958+28.000	961+01.000	0.0517	1.685	1.897	0.0648	0.0182	0.0466	0.0730	0.0195	0.0535	-0.0082	-0.0013	-0.0069	1.2532	0.42	
156	961+01.000	962+00.000	0.0187	0.651	0.681	0.0251	0.0069	0.0182	0.0262	0.0070	0.0192	-0.0011	-0.0001	-0.0010	1.3360	0.44	
157	962+00.000	963+69.000	0.0320	1.069	1.151	0.0411	0.0114	0.0297	0.0443	0.0118	0.0325	-0.0032	-0.0004	-0.0027	1.2842	0.42	
158	963+69.000	965+00.000	0.0248	0.850	0.901	0.0327	0.0090	0.0237	0.0347	0.0092	0.0254	-0.0020	-0.0002	-0.0017	1.3176	0.44	
159	965+00.000	966+38.000	0.0261	0.893	0.949	0.0343	0.0095	0.0249	0.0365	0.0097	0.0268	-0.0022	-0.0003	-0.0019	1.3136	0.43	
160	966+38.000	966+70.000	0.0061	0.217	0.220	0.0083	0.0023	0.0061	0.0085	0.0023	0.0062	-0.0001	0.0000	-0.0001	1.3765	0.46	
161	966+70.000	966+91.000	0.0040	0.143	0.144	0.0055	0.0015	0.0040	0.0056	0.0015	0.0041	-0.0001	0.0000	-0.0001	1.3834	0.46	
Marion Rd/ SD38 (v1)	966+91.000			114.572	49.969	4.4066	1.5303	2.8763	1.9219	0.6310	1.2909	2.4847	0.8993	1.5854			0.65
162	966+91.000	967+14.000	0.0044	0.203	0.205	0.0078	0.0027	0.0051	0.0079	0.0025	0.0054	-0.0001	0.0001	-0.0002	1.7894	0.59	
163	967+14.000	967+20.000	0.0011	0.053	0.053	0.0021	0.0007	0.0014	0.0021	0.0007	0.0014	-0.0000	0.0000	-0.0000	1.8054	0.60	
164	967+20.000	967+45.000	0.0047	0.240	0.243	0.0092	0.0031	0.0061	0.0093	0.0030	0.0063	-0.0001	0.0001	-0.0003	1.9466	0.65	
165	967+45.000	968+06.000	0.0116	0.412	0.424	0.0159	0.0043	0.0115	0.0163	0.0043	0.0120	-0.0005	-0.0000	-0.0004	1.3720	0.45	
166	968+06.000	970+79.000	0.0517	1.685	1.897	0.0648	0.0182	0.0466	0.0730	0.0195	0.0535	-0.0082	-0.0013	-0.0069	1.2532	0.42	
167	970+79.000	971+09.000	0.0057	0.206	0.208	0.0079	0.0021	0.0058	0.0080	0.0021	0.0059	-0.0001	0.0000	-0.0001	1.3915	0.46	
168	971+09.000	974+11.000	0.0572	1.842	2.098	0.0708	0.0199	0.0509	0.0807	0.0215	0.0592	-0.0099	-0.0016	-0.0083	1.2387	0.41	
All Segments			0.4850	21.280	24.862	0.8185	0.2585	0.5600	0.9562	0.2860	0.6702	-0.1378	-0.0275	-0.1102	1.6874	0.56	
All Intersections				114.572	49.969	4.4066	1.5303	2.8763	1.9219	0.6310	1.2909	2.4847	0.8993	1.5854			0.65
Total			0.4850	135.852	74.831	5.2251	1.7887	3.4363	2.8781	0.9170	1.9611	2.3470	0.8718	1.4752	10.7725		

Table 26. Expected Crash Frequencies and Rates by Horizontal Design Element (Section 4)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Expected Crashes for Evaluation Period	Total Predicted Crashes for Evaluation Period	Expected Total Crash Frequency (crashes/yr)	Expected FI Crash Frequency (crashes/yr)	Expected PDO Crash Frequency (crashes/yr)	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	(Expected - Predicted) Total Crash Frequency (crashes/yr)	(Expected - Predicted) FI Crash Frequency (crashes/yr)	(Expected - Predicted) PDO Crash Frequency (crashes/yr)	Expected Crash Rate (crashes/mi/yr)	Expected Travel Crash Rate (crashes/million veh-mi)
Tangent	948+50.000	974+11.000	0.4850	21.280	24.862	0.8185	0.2585	0.5600	0.9562	0.2860	0.6702	-0.1378	-0.0275	-0.1102	1.6874	0.56

Table 27. Predicted Crash Frequencies by Year (Section 4)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2025	1.54	0.47	30.768	1.07	69.232
2026	1.62	0.50	30.791	1.12	69.209
2027	1.69	0.52	30.812	1.17	69.188
2028	1.77	0.55	30.830	1.22	69.170
2029	1.85	0.57	30.847	1.28	69.153
2030	1.93	0.60	30.902	1.33	69.098
2031	2.01	0.62	30.960	1.39	69.040
2032	2.10	0.65	31.018	1.45	68.982
2033	2.18	0.68	31.078	1.50	68.922
2034	2.27	0.71	31.139	1.56	68.862
2035	2.35	0.73	31.199	1.62	68.801
2036	2.44	0.76	31.260	1.68	68.740
2037	2.53	0.79	31.321	1.74	68.679
2038	2.61	0.82	31.381	1.79	68.618
2039	2.70	0.85	31.442	1.85	68.558
2040	2.79	0.88	31.502	1.91	68.498
2041	3.01	0.95	31.680	2.06	68.320
2042	3.24	1.03	31.854	2.21	68.146
2043	3.46	1.11	32.026	2.35	67.975
2044	3.69	1.19	32.192	2.50	67.808
2045	3.92	1.27	32.354	2.65	67.646
2046	4.15	1.35	32.511	2.80	67.489
2047	4.39	1.43	32.664	2.95	67.336
2048	4.62	1.52	32.811	3.11	67.189
2049	4.86	1.60	32.954	3.26	67.046
2050	5.10	1.69	33.093	3.41	66.907
Total	74.83	23.84	31.860	50.99	68.140
Average	2.88	0.92	31.860	1.96	68.140

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 28. Expected Crash Frequencies by Year (Section 4)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2025	2.80	0.93	33.060	1.87	66.820
2026	2.94	0.97	33.085	1.96	66.798
2027	3.07	1.02	33.107	2.05	66.778
2028	3.21	1.06	33.127	2.15	66.760
2029	3.35	1.11	33.145	2.24	66.744
2030	3.50	1.16	33.205	2.34	66.691
2031	3.65	1.22	33.266	2.44	66.635
2032	3.81	1.27	33.329	2.54	66.579
2033	3.96	1.32	33.394	2.63	66.521
2034	4.12	1.38	33.458	2.74	66.463
2035	4.27	1.43	33.524	2.84	66.404
2036	4.43	1.49	33.589	2.94	66.346
2037	4.59	1.54	33.654	3.04	66.287
2038	4.75	1.60	33.719	3.14	66.228
2039	4.91	1.66	33.784	3.25	66.170
2040	5.07	1.72	33.849	3.35	66.112
2041	5.47	1.86	34.040	3.61	65.941
2042	5.88	2.01	34.228	3.86	65.772
2043	6.29	2.16	34.411	4.12	65.607
2044	6.70	2.32	34.590	4.38	65.446
2045	7.12	2.47	34.765	4.65	65.289
2046	7.54	2.63	34.934	4.91	65.138
2047	7.96	2.79	35.097	5.18	64.991
2048	8.39	2.96	35.256	5.44	64.848
2049	8.82	3.12	35.409	5.71	64.710
2050	9.26	3.29	35.558	5.98	64.577
Total	135.85	46.51	34.234	89.34	65.766
Average	5.22	1.79	34.234	3.44	65.766

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 29. Comparing Predicted and Expected Crashes for the Evaluation Period (Section 4)

Scope	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
Predicted	74.83	23.84	31.860	50.99	68.140
Expected	135.85	46.51	34.234	89.34	65.766
Expected - Predicted	61.02	22.67		38.35	
Percent Difference	44.92	48.74		42.93	

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Table 30. Expected Five Lane or Fewer Crash Type Distribution (Section 4)

Element Type	Crash Type	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)	Total Crashes	Percent Total (%)
Highway Segment	Collision with Animal	0.00	0.0	0.21	0.2	0.21	0.2
Highway Segment	Collision with Bicycle	0.09	0.1	0.00	0.0	0.09	0.1
Highway Segment	Collision with Fixed Object	0.57	0.4	3.57	2.6	4.14	3.0
Highway Segment	Collision with Other Object	0.03	0.0	0.09	0.1	0.11	0.1
Highway Segment	Other Single-vehicle Collision	0.43	0.3	0.53	0.4	0.97	0.7
Highway Segment	Collision with Pedestrian	0.34	0.3	0.00	0.0	0.34	0.3
Highway Segment	Total Single Vehicle Crashes	1.47	1.1	4.39	3.2	5.86	4.3
Highway Segment	Angle Collision	0.37	0.3	0.54	0.4	0.91	0.7
Highway Segment	Driveway-related Collision	1.32	1.0	2.27	1.7	3.58	2.6
Highway Segment	Head-on Collision	0.17	0.1	0.05	0.0	0.21	0.2
Highway Segment	Other Multi-vehicle Collision	0.20	0.1	0.58	0.4	0.79	0.6
Highway Segment	Rear-end Collision	2.79	2.1	4.80	3.5	7.59	5.6
Highway Segment	Sideswipe, Opposite Direction Collision	0.15	0.1	0.09	0.1	0.24	0.2
Highway Segment	Sideswipe, Same Direction Collision	0.26	0.2	1.83	1.3	2.09	1.5
Highway Segment	Total Multiple Vehicle Crashes	5.25	3.9	10.16	7.5	15.42	11.3
Highway Segment	Total Highway Segment Crashes	6.72	4.9	14.56	10.7	21.28	15.7
Intersection	Collision with Animal	0.00	0.0	0.00	0.0	0.01	0.0
Intersection	Collision with Bicycle	0.73	0.5	0.00	0.0	0.73	0.5
Intersection	Collision with Fixed Object	0.90	0.7	1.71	1.3	2.61	1.9
Intersection	Non-Collision	0.17	0.1	0.07	0.0	0.24	0.2
Intersection	Collision with Other Object	0.09	0.1	0.14	0.1	0.23	0.2
Intersection	Other Single-vehicle Collision	0.05	0.0	0.04	0.0	0.09	0.1
Intersection	Collision with Parked Vehicle	0.00	0.0	0.00	0.0	0.00	0.0
Intersection	Collision with Pedestrian	0.44	0.3	0.00	0.0	0.44	0.3
Intersection	Total Intersection Single Vehicle Crashes	2.38	1.7	1.97	1.4	4.34	3.2
Intersection	Angle Collision	12.98	9.6	17.77	13.1	30.75	22.6
Intersection	Head-on Collision	1.83	1.3	2.18	1.6	4.02	3.0
Intersection	Other Multi-vehicle Collision	2.06	1.5	15.36	11.3	17.42	12.8
Intersection	Rear-end Collision	16.84	12.4	35.17	25.9	52.01	38.3
Intersection	Sideswipe	3.70	2.7	2.33	1.7	6.03	4.4
Intersection	Total Intersection Multiple Vehicle Crashes	37.41	27.5	72.82	53.6	110.23	81.1
Intersection	Total Intersection Crashes	39.79	29.3	74.78	55.0	114.57	84.3
	Total Crashes	46.51	34.2	89.34	65.8	135.85	100.0

Note: *Fatal and Injury Crashes* and *Property Damage Only Crashes* do not necessarily sum up to *Total Crashes* because the distribution of these three crashes had been derived independently.

Appendix C – Study Intersections

N

19

457TH AVE

459TH AVE

I-90 Speedway Entrance

Humboldt

38

Hartford

466TH AVE

Crooks

EXIT 390

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

WESTERN AVE

MAIN AVE

VANDEMARK AVE

2ND ST

West Central High School Entrance

RAILROAD ST

MICKELSON RD

466TH AVE

468TH AVE

469TH AVE

LA MESA DR

MARION RD

Sioux Falls

INTERSTATE 90

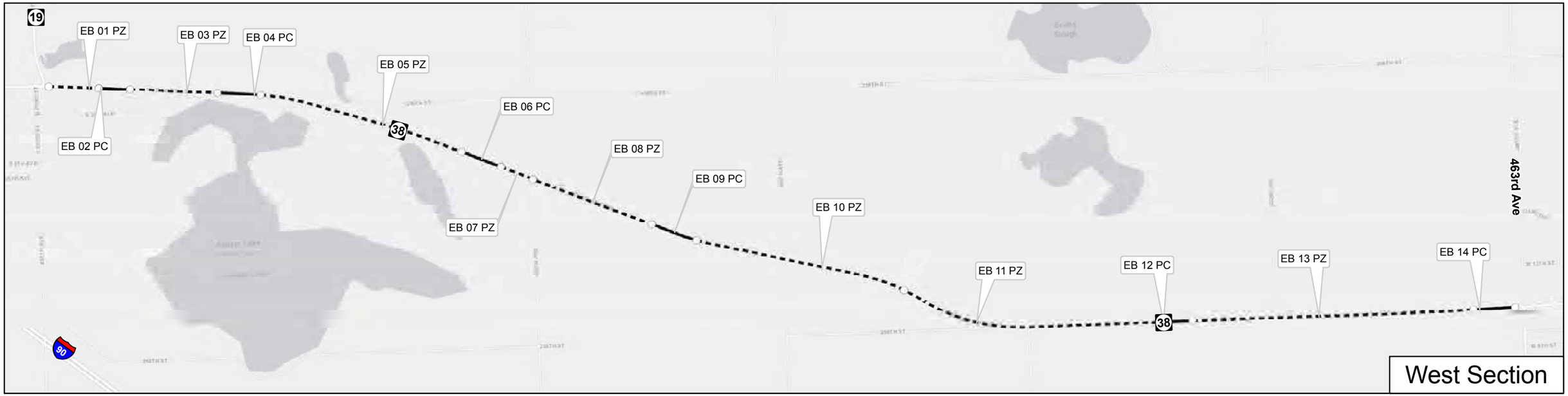
INTERSTATE 29

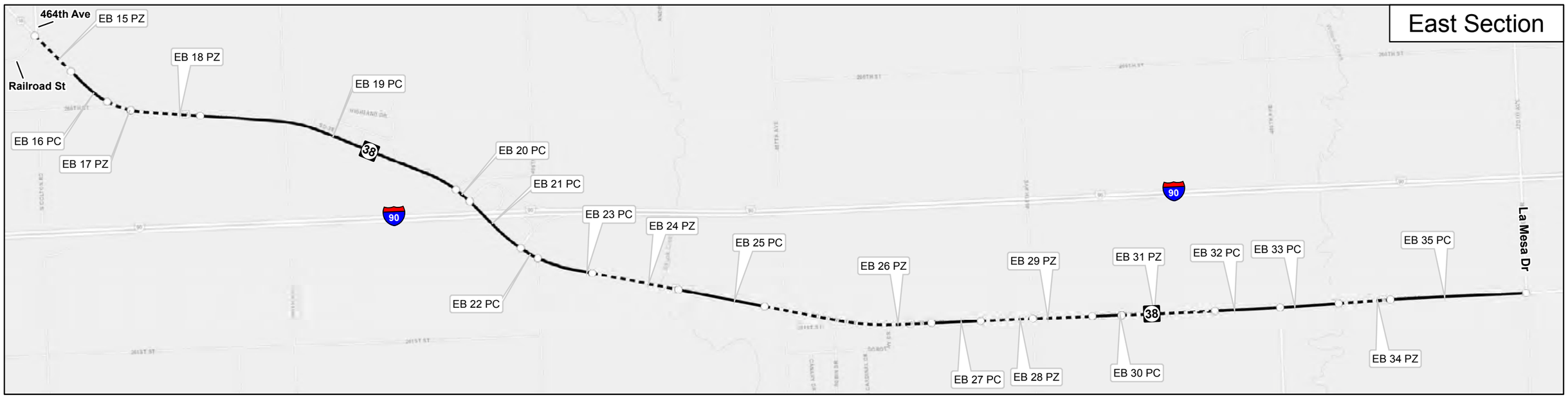
42

17

298

Appendix D – Study Segments





Highway 38 Analysis Segments

Eastbound Lanes

Legend

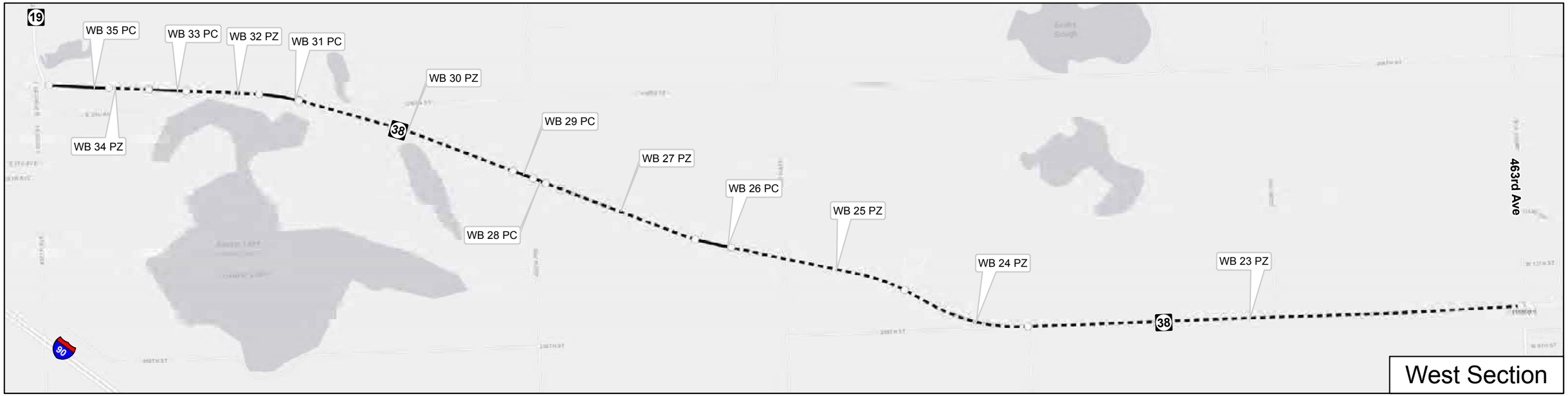
Analysis Segments

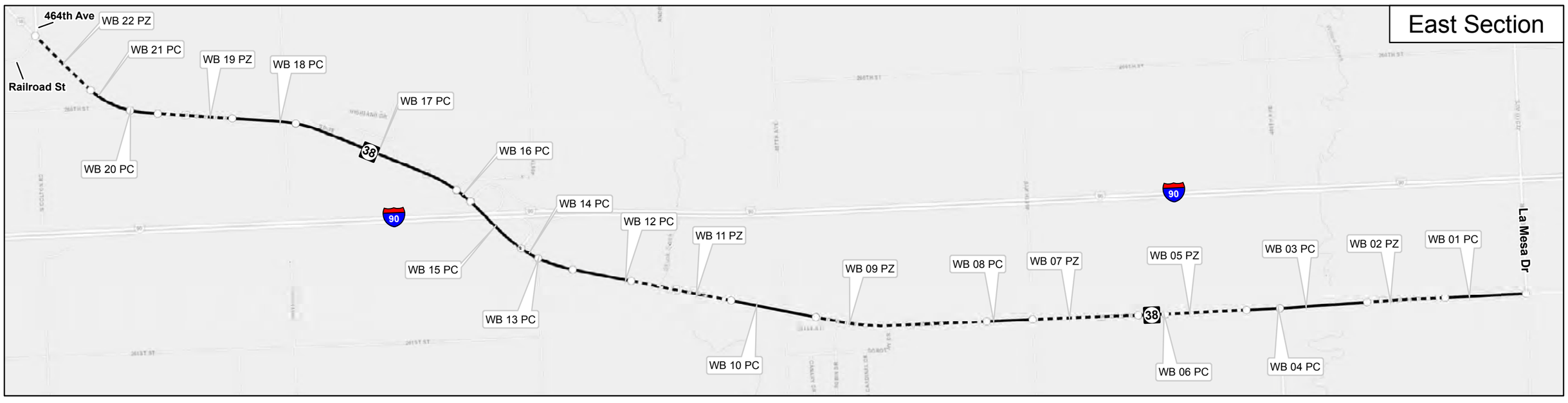
- Passing Constrained
- Passing Zones

N

0 0.5 1 Miles

HRGreen





Highway 38 Analysis Segments

Westbound Lanes

Legend

Analysis Segments

- Passing Constrained
- Passing Zones

N

0 0.5 1 Miles

HRGreen

SD38 Corridor Study

LEGEND

BRIDGE WIDENING

SHOULDER	8'
THROUGH LANE	12'
THROUGH LANE	12'
CENTERLINE — CENTER TURN LANE	12'
THROUGH LANE	12'
THROUGH LANE	12'
SHOULDER	8'

SHOULDER	8'
THROUGH LANE	12'
THROUGH LANE	12'
CENTERLINE — MEDIAN	20'
THROUGH LANE	12'
THROUGH LANE	12'
SHOULDER	8'

SHOULDER	8'
THROUGH LANE	12'
THROUGH LANE	12'
CENTERLINE — LEFT TURN LANE	12'
MEDIAN	8'
THROUGH LANE	12'
THROUGH LANE	12'
SHOULDER	8'

665+00 670+00 675+00 680+00 685+00 690+00 695+00 700+00 705+00 710+00 715+00 720+00 725+00

STOP STOP STOP

I 90 I 90

0 100 200

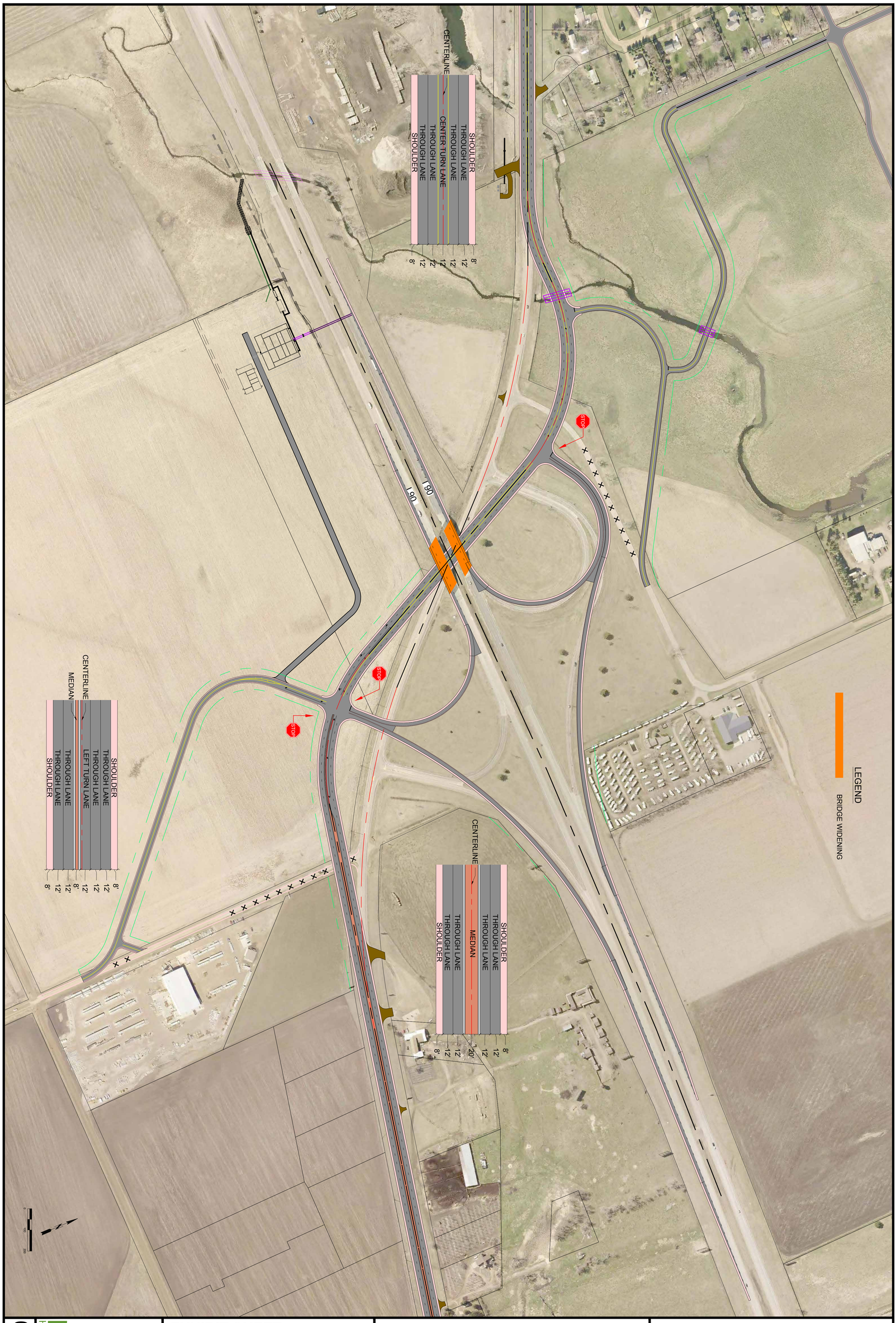
SOUTH DAKOTA
HIGHWAY 38 CORRIDOR STUDY

OPTION 1 - FOLDED
DIAMOND-EXISTING ALIGNMENT

EXHIBIT SHEET
SD 38 - I90 INTERCHANGE

HRGreen

001



002 HRGreen	EXHIBIT SHEET SD 38 - I90 INTERCHANGE	OPTION 2 - FOLDED DIAMOND - 65 DEGREE SKEW	SOUTH DAKOTA HIGHWAY 38 CORRIDOR STUDY

LEGEND

BRIDGE WIDENING

STOP

STOP

STOP

I90

I90

28°

47°

0 100 200

SOUTH DAKOTA
HIGHWAY 38 CORRIDOR STUDY

OPTION 3 - FOLDED DIAMOND 75 DEGREE SKEW

EXHIBIT SHEET
SD 38 - I90 INTERCHANGE

HRGreen

003

LEGEND

BRIDGE WIDENING

SHOULDER	8'
THROUGH LANE	12'
THROUGH LANE	12'
CENTER TURN LANE	12'
THROUGH LANE	12'
THROUGH LANE	12'
SHOULDER	8'

CENTERLINE

SHOULDER	8'
THROUGH LANE	12'
THROUGH LANE	12'
LEFT TURN LANE	12'
MEDIAN	8'
THROUGH LANE	12'
THROUGH LANE	12'
SHOULDER	8'

CENTERLINE

SHOULDER	8'
THROUGH LANE	12'
THROUGH LANE	12'
MEDIAN	20'
THROUGH LANE	12'
THROUGH LANE	12'
SHOULDER	8'

STOP

STOP

STOP

I90

I90

28°

47°

0 100 200

SOUTH DAKOTA
HIGHWAY 38 CORRIDOR STUDY

OPTION 3.2 - FOLDED DIAMOND -
75 DEGREE SKEW - 466TH TIE IN

EXHIBIT SHEET
SD 38 - I90 INTERCHANGE

HRGreen

004

LEGEND

BRIDGE WIDENING

SHOULDER	8'
THROUGH LANE	12'
THROUGH LANE	12'
CENTERLINE — CENTER TURN LANE	12'
THROUGH LANE	12'
THROUGH LANE	12'
SHOULDER	8'

SHOULDER	8'
THROUGH LANE	12'
THROUGH LANE	12'
CENTERLINE — LEFT TURN LANE	12'
MEDIAN	8'
THROUGH LANE	12'
THROUGH LANE	12'
SHOULDER	8'

665+00 670+00 675+00 680+00 685+00 690+00 695+00 700+00 705+00 710+00 715+00 720+00 725+00

STOP

I 90

0 100 200

SOUTH DAKOTA HIGHWAY 38 CORRIDOR STUDY

OPTION 4 - 3/4 STANDARD DIAMOND

EXHIBIT SHEET SD 38 - I90 INTERCHANGE

HRGreen

005

LEGEND

BRIDGE WIDENING

STOP

I 90

28°

47°

SHOULDER	8'
THROUGH LANE	12'
THROUGH LANE	12'
CENTERLINE — CENTER TURN LANE	12'
THROUGH LANE	12'
THROUGH LANE	12'
SHOULDER	8'

SHOULDER	8'
THROUGH LANE	12'
THROUGH LANE	12'
CENTERLINE — MEDIAN	20'
THROUGH LANE	12'
THROUGH LANE	12'
SHOULDER	8'

SHOULDER	8'
THROUGH LANE	12'
THROUGH LANE	12'
CENTERLINE — LEFT TURN LANE	12'
MEDIAN	8'
THROUGH LANE	12'
THROUGH LANE	12'
SHOULDER	8'

0 100 200

SOUTH DAKOTA HIGHWAY 38 CORRIDOR STUDY

OPTION 5 - DIAMOND SHIFTED WEST

EXHIBIT SHEET SD 38 - I90 INTERCHANGE

HRGreen

006

LEGEND

- BRIDGE WIDENING
- MEDIAN (GRASS, SHRUBS)
- TRUCK APPRON

I 90

I 90

28°

47°

0 100 200

SOUTH DAKOTA
HIGHWAY 38 CORRIDOR STUDY

OPTION 6 - FOLDED DIAMOND - ROUNDABOUT

EXHIBIT SHEET
SD 38 - I90 INTERCHANGE

HRGreen

007

LEGEND

BRIDGE WIDENING

STOP

STOP

STOP

STOP

75'

I 90

I 90

SHOULDER	8'
THROUGH LANE	12'
THROUGH LANE	12'
CENTERLINE — CENTER TURN LANE	12'
THROUGH LANE	12'
THROUGH LANE	12'
SHOULDER	8'

SHOULDER	8'
THROUGH LANE	12'
THROUGH LANE	12'
CENTERLINE — LEFT TURN LANE	12'
MEDIAN	8'
THROUGH LANE	12'
THROUGH LANE	12'
SHOULDER	8'

SHOULDER	8'
THROUGH LANE	12'
THROUGH LANE	12'
CENTERLINE — MEDIAN	12'
	20'
THROUGH LANE	12'
THROUGH LANE	12'
SHOULDER	8'

0 100 200

SOUTH DAKOTA
HIGHWAY 38 CORRIDOR STUDY

OPTION 7 - DIAMOND SHIFTED
EAST

EXHIBIT SHEET
SD 38 - I90 INTERCHANGE

HRGreen

008

LEGEND

BRIDGE WIDENING

MEDIAN

I 90

I 90

SHOULDER	8'
THROUGH LANE	12'
THROUGH LANE	12'
CENTERLINE — CENTER TURN LANE	12'
THROUGH LANE	12'
THROUGH LANE	12'
SHOULDER	8'

0 100 200

SOUTH DAKOTA
HIGHWAY 38 CORRIDOR STUDY

OPTION 8 - STANDARD SPI

EXHIBIT SHEET
SD 38 - I90 INTERCHANGE

HRGreen

009

LEGEND

BRIDGE WIDENING

MEDIAN

SHOULDER	8'
THROUGH LANE	12'
THROUGH LANE	12'
CENTERLINE — MEDIAN	20'
THROUGH LANE	12'
THROUGH LANE	12'
SHOULDER	8'

SHOULDER	8'
THROUGH LANE	12'
THROUGH LANE	12'
CENTERLINE — MEDIAN	12'
THROUGH LANE	12'
THROUGH LANE	12'
SHOULDER	8'

I 90

I 90

75

0 100 200

SOUTH DAKOTA HIGHWAY 38 CORRIDOR STUDY

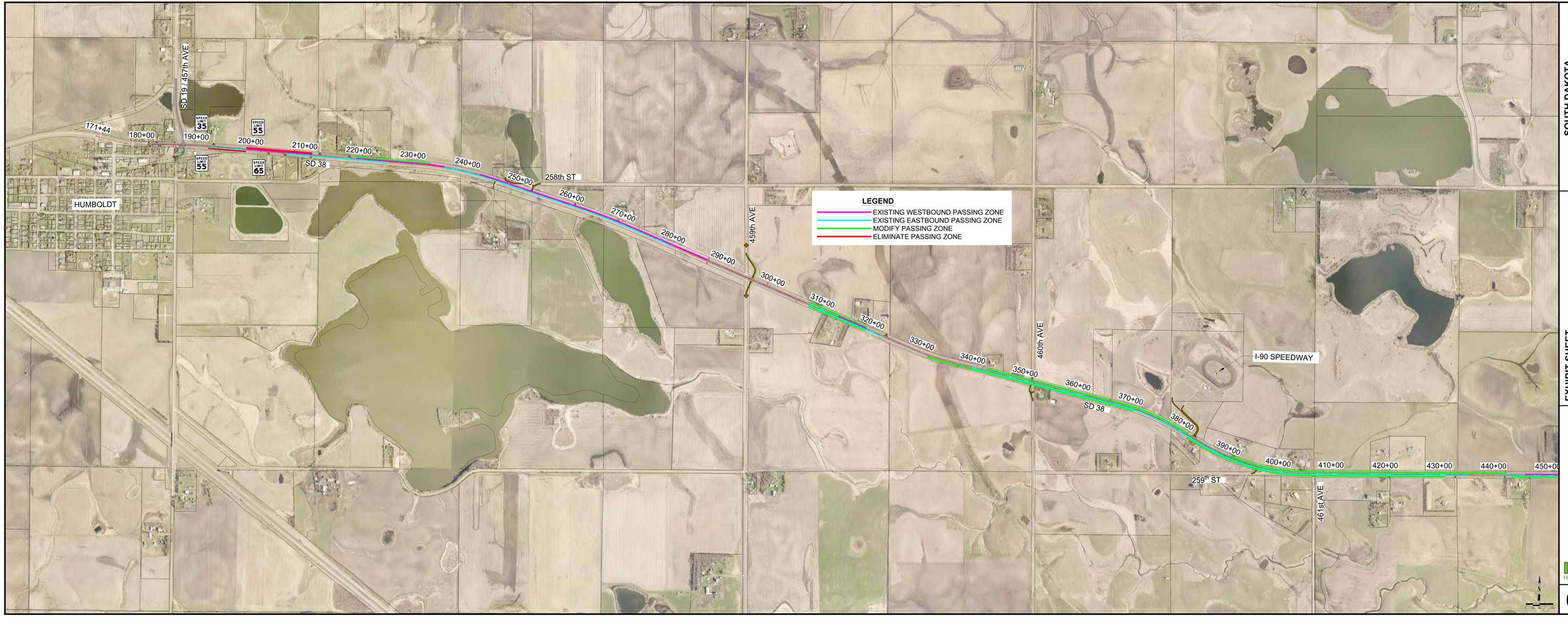
OPTION 9 - DDI

EXHIBIT SHEET SD 38 - I90 INTERCHANGE

HRGreen

010

SD38 Corridor Study

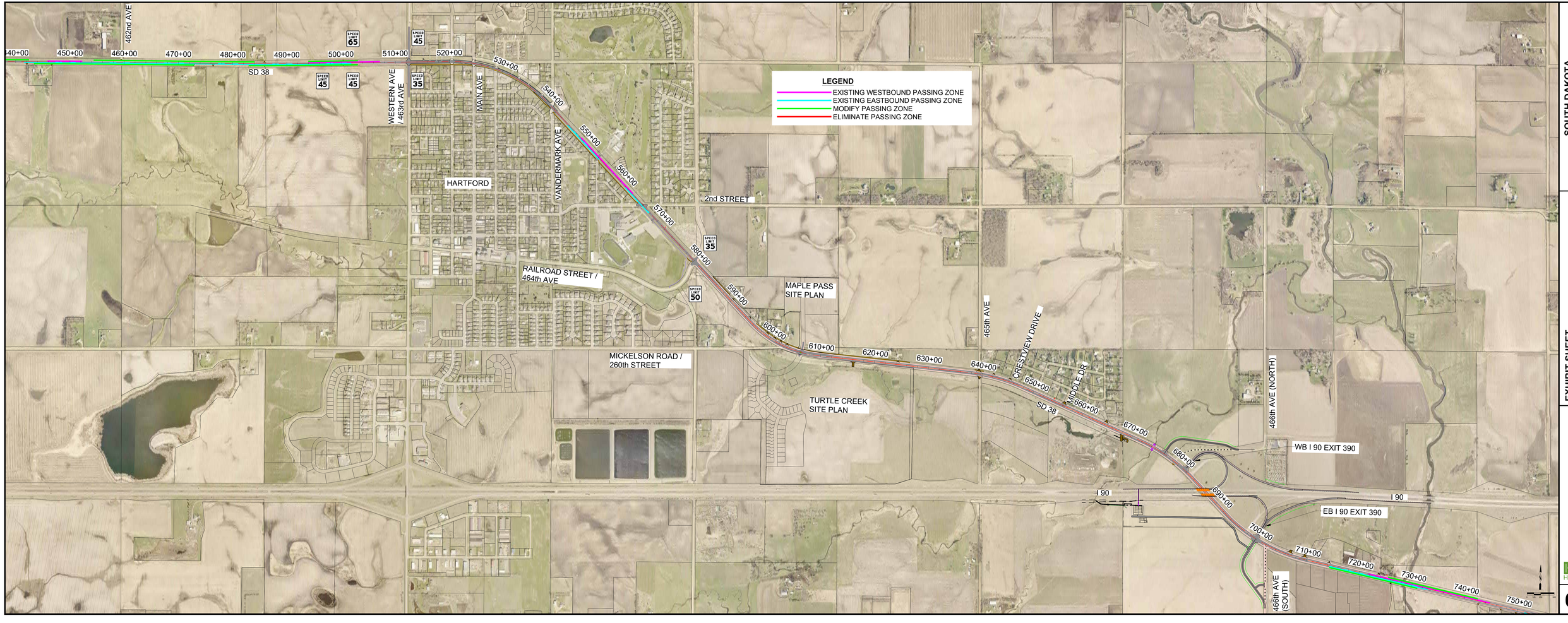


SOUTH DAKOTA
HIGHWAY 38 CORRIDOR STUDY

EXHIBIT SHEET
PASSING ZONES IMPROVEMENT RECOMMENDATIONS

HRGreen

01

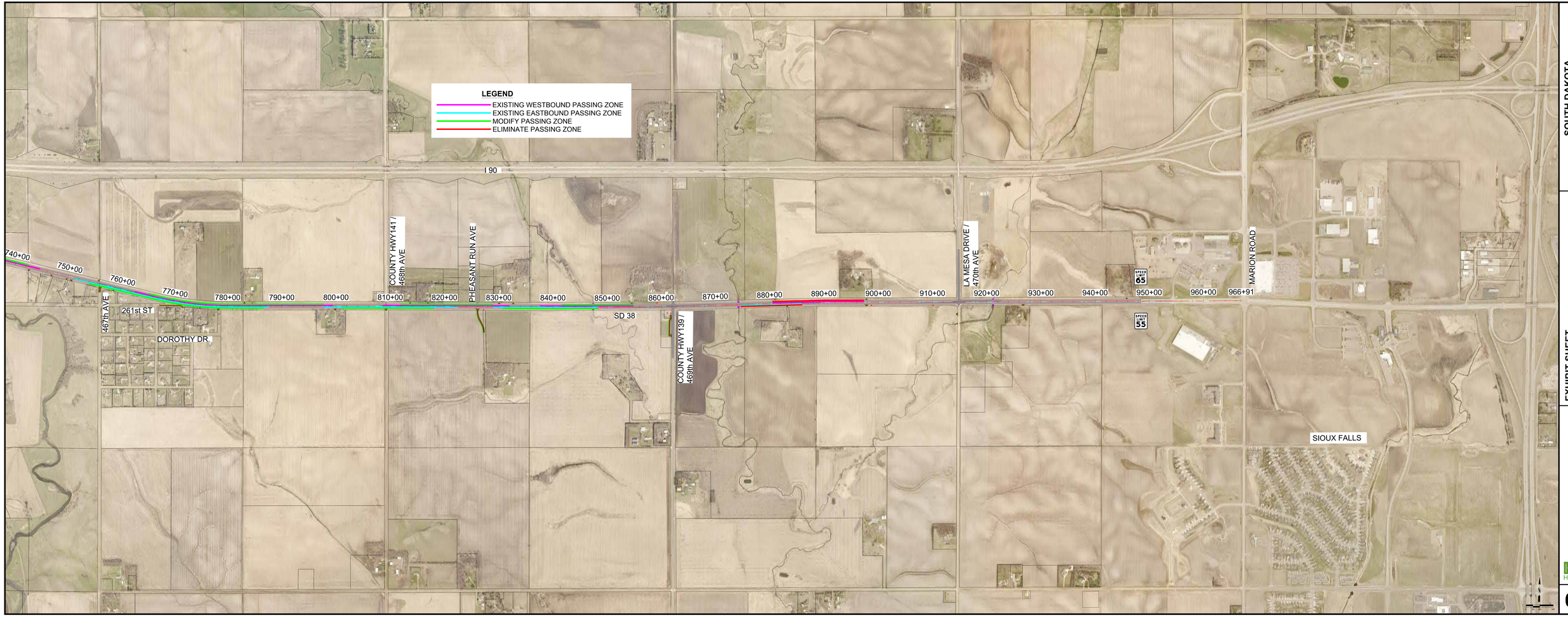


SOUTH DAKOTA
HIGHWAY 38 CORRIDOR STUDY

EXHIBIT SHEET
PASSING ZONES IMPROVEMENT RECOMMENDATIONS

HRGreen

02



SOUTH DAKOTA
HIGHWAY 38 CORRIDOR STUDY

EXHIBIT SHEET
PASSING ZONES IMPROVEMENT RECOMMENDATIONS

HRGreen

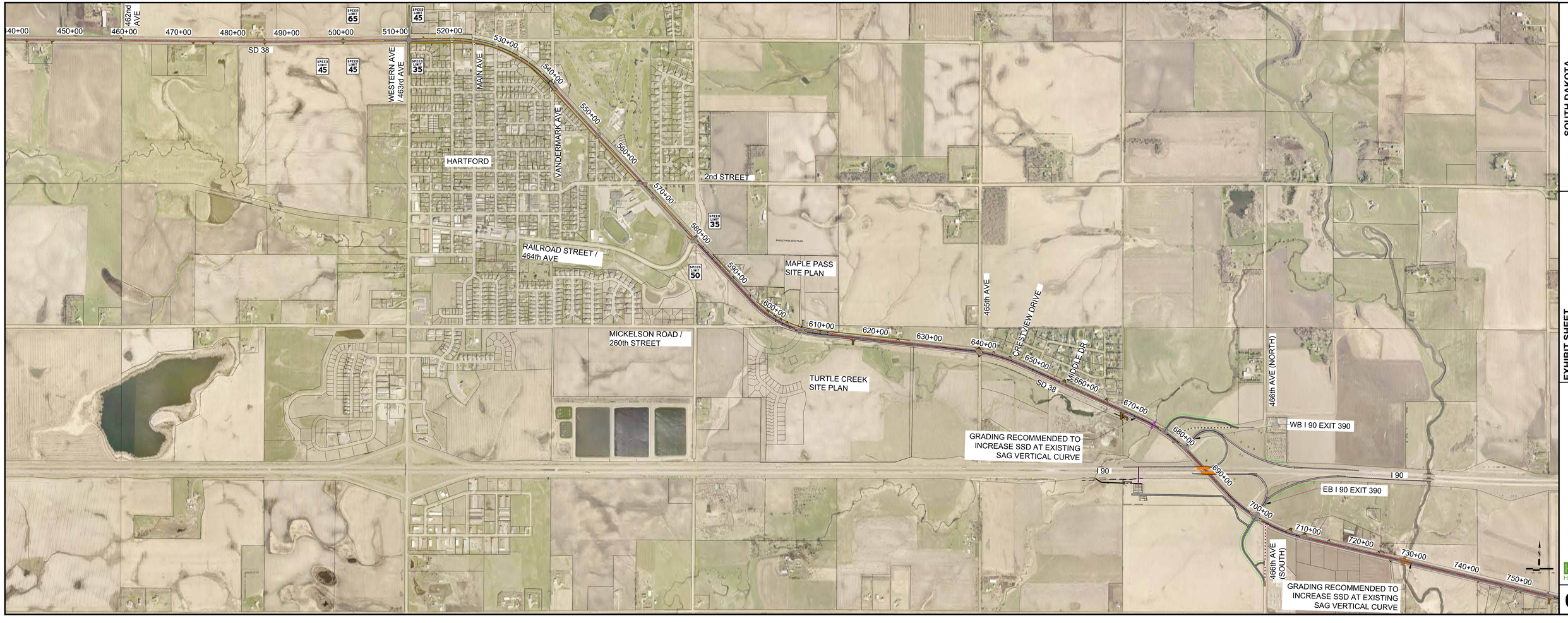
03

SOUTH DAKOTA
HIGHWAY 38 CORRIDOR STUDY

EXHIBIT SHEET
VERTICAL CURVE GRADING RECOMMENDATIONS

HRGreen

01

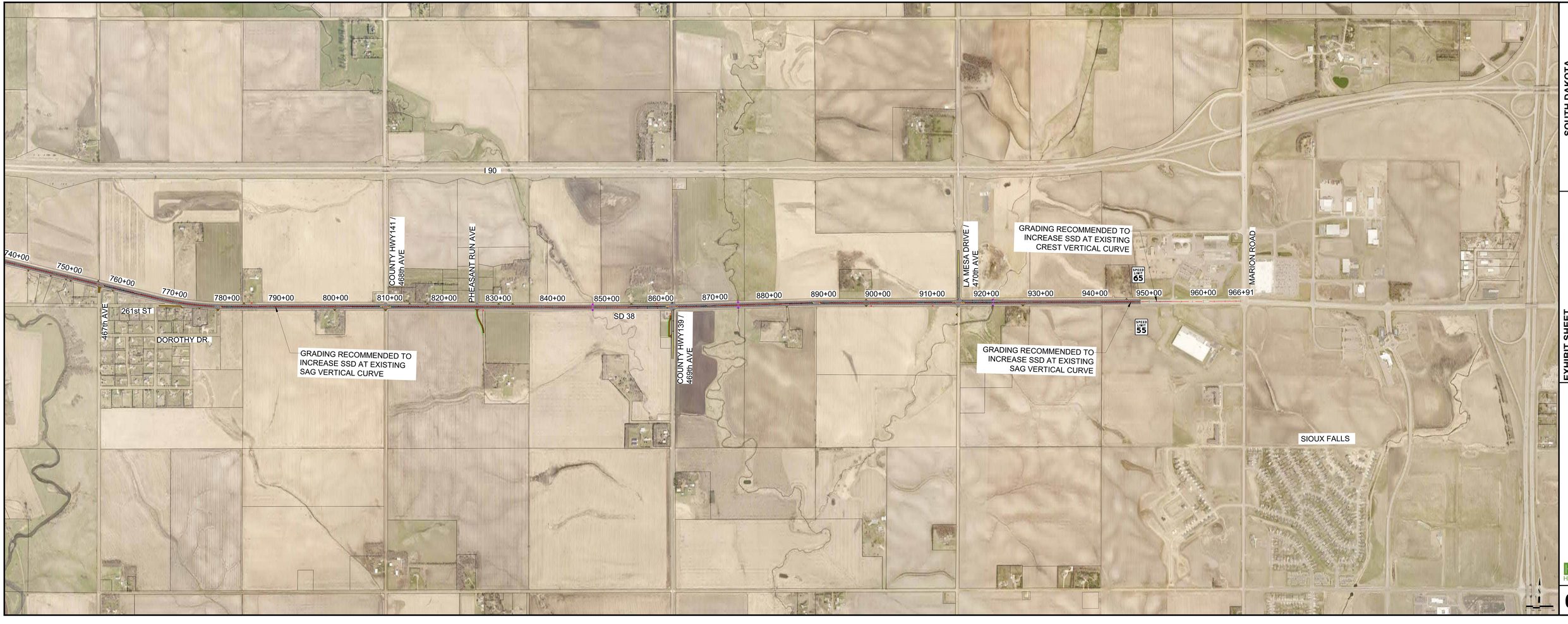


SOUTH DAKOTA
HIGHWAY 38 CORRIDOR STUDY

EXHIBIT SHEET
VERTICAL CURVE GRADING RECOMMENDATIONS

HRGreen

02

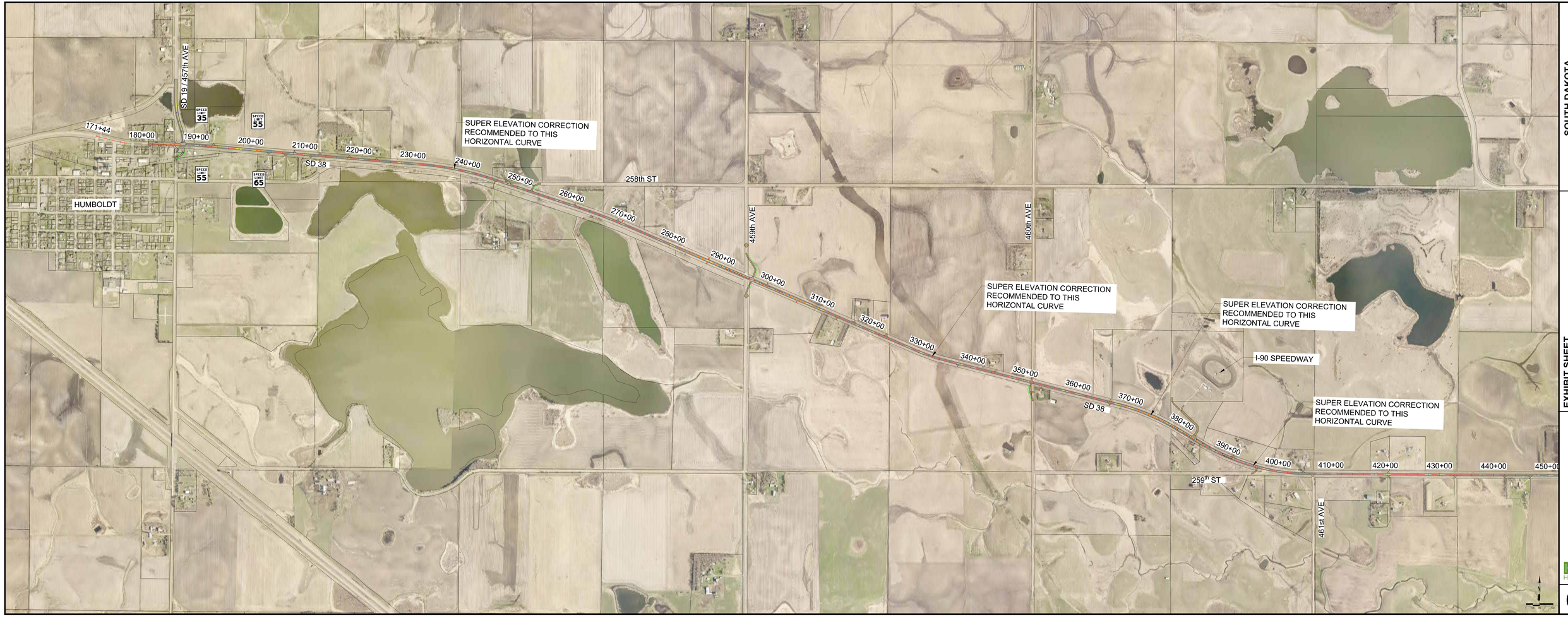


SOUTH DAKOTA
HIGHWAY 38 CORRIDOR STUDY

EXHIBIT SHEET
VERTICAL CURVE GRADING RECOMMENDATIONS

HRGreen

03

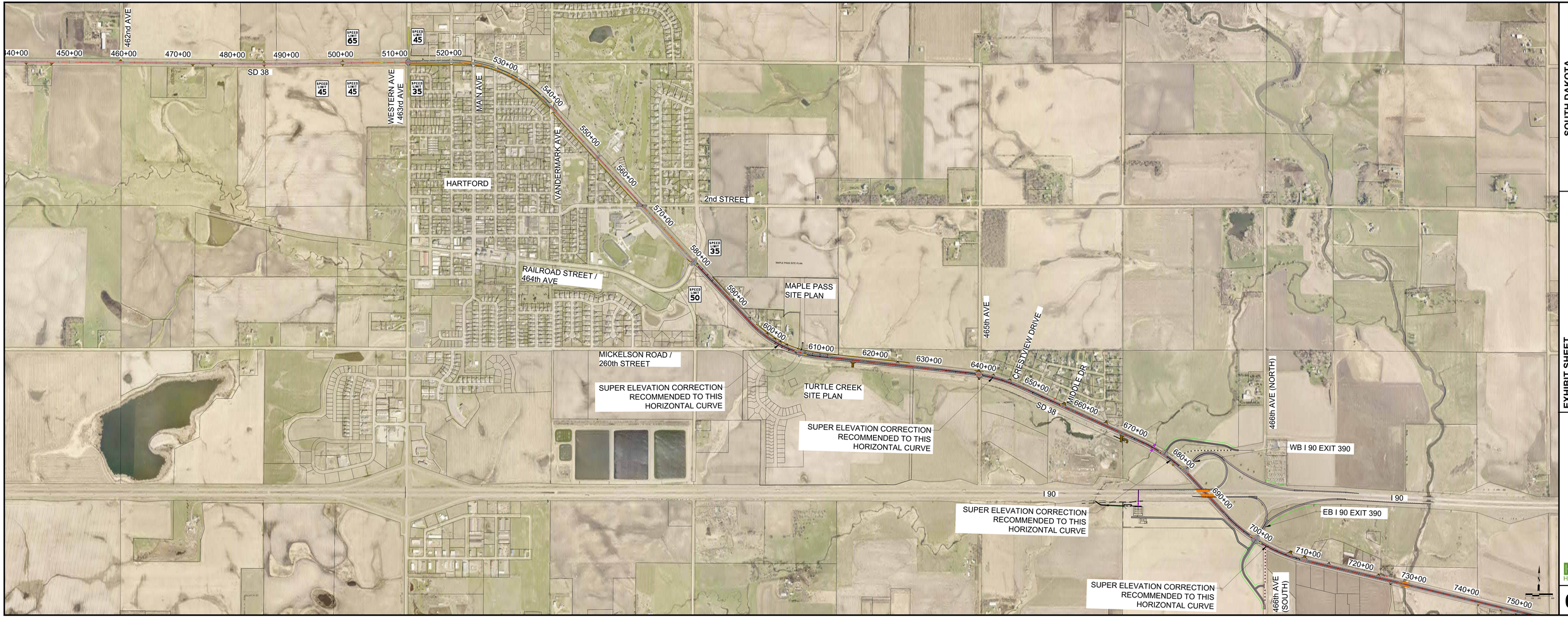


SOUTH DAKOTA
HIGHWAY 38 CORRIDOR STUDY

EXHIBIT SHEET
SUPER ELEVATION IMPROVEMENT RECOMMENDATIONS

HRGreen

01



SOUTH DAKOTA
HIGHWAY 38 CORRIDOR STUDY

EXHIBIT SHEET
SUPER ELEVATION IMPROVEMENT RECOMMENDATIONS

HRGreen

02

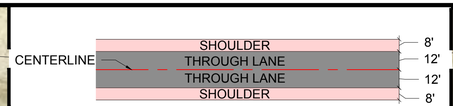
SOUTH DAKOTA
HIGHWAY 38 CORRIDOR STUDY

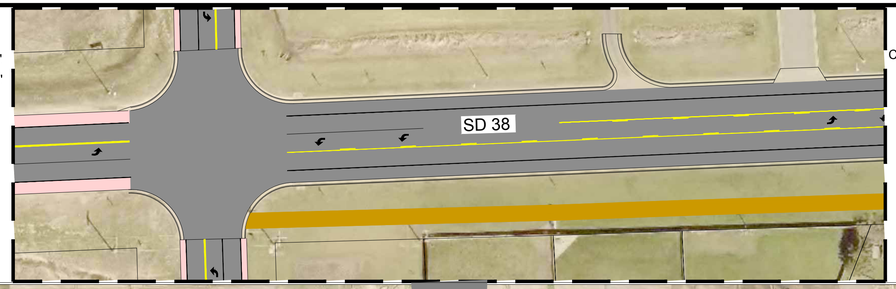
EXHIBIT SHEET
SUPER ELEVATION IMPROVEMENT RECOMMENDATIONS

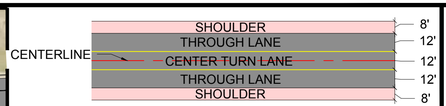
HRGreen

03

SD38 Corridor Study







TRAIL

Project #4
Humboldt to Hartford

461ST AVE

459TH AVE

463RD AVE

19

HUMBOLDT

38

90

HARTFORD

Project #1
Vandemark Ave to I90

465TH AVE

Project #2
I90 Exit 390 Interchange

MARION RD

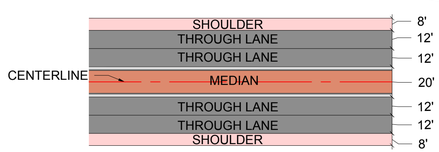
Project #3
I90 to Sioux Falls

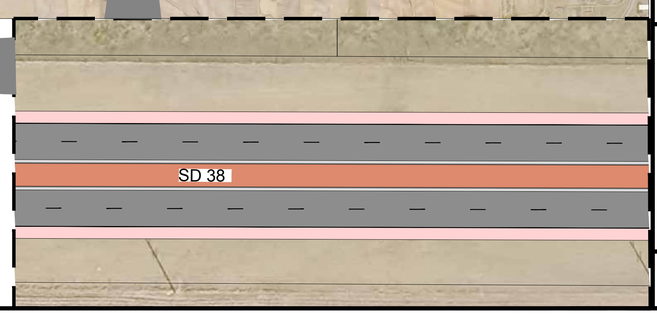
90

38

SIOUX FALLS

469TH AVE





SOUTH DAKOTA HIGHWAY 38 CORRIDOR STUDY

OPTION 3 - 2 LANES, 3 LANES, 4 LANES WITH RAISED MEDIAN

EXHIBIT SHEET
SD HIGHWAY 38 MAINLINE

HRGreen