Comprehensive Engineering Services

Access Justification Report (AJR)

I-35 Interchange Access at SH-74 (West Grant Street)

City of Purcell, McClain County, Oklahoma

JP 32802(04)

Prepared for:

CITY OF PURCELL

Oklahoma Department of Transportation

July 2022

Prepared By:
EST, Inc.
615 N Hudson Avenue, Suite 300
Oklahoma City, OK 73102

DATE: 7/8/2022

Ms. Lauren Parrish, PE

Oklahoma Department of Transportation
200 N.E. 21st Street
Oklahoma City, OK 73105

Re: Access Justification Report for new interchange on I-35 at SH 74

Dear Ms. Parrish,

The city of Purcell has completed an Alternatives Analysis study and is in the process of completing the National Environmental Protection Act (NEPA) process to receive approval for a new interchange on I-35 at SH-74. A full Access Justification Report (AJR) will be submitted after the completion of the NEPA process for final approval. Enclosed for review and concurrence is an AJR addressing the first four FHWA Policy Points. The enclosed document contains a summary of the Alternatives Analysis study, with the full Alternatives Analysis Report included as an appendix. Based on the Alternatives Analysis Report, the Proposed Action is a new, full movement, diamond interchange.

The city of Purcell seeks a favorable determination of safety, operations, and engineering acceptability for a new, full movement, diamond interchange to I-35 at SH-74 (West Grant Street) within the city of Purcell, Oklahoma.

Should you have any questions please do not hesitate to contact me at (405) 527-6561.

Sincerely,

Dale Bunn

City Manager
230 West Main Street
Purcell, OK 73080
(405) 527-6561

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ABBREVIATIONS

AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
ATS	Average Travel Speed
Ave	Avenue
Blvd	Boulevard
CAGR	Compound Annual Growth Rates
ODOT	Oklahoma Department of Transportation
EA	Environmental Assessment
EB	Eastbound
FAT	Fatality
FFS	Free Flow Speed
HCS	Highway Capacity Software
HCM	Highway Capacity Manual
HSM	Highway Safety Manual
I	Interstate Highway
INJ	Injury
LOS	Level of Service

mi	Mile
mph	Miles per Hour
NB	Northbound
PDO	Property Damage Only
PFFS	Percent of Free Flow Speed
PTSF	Percent Time Spent Following
ROW	Right of Way
SB	Southbound
SH	State Highway
TRB	Transportation Research Board
TMC	Turning Movement Counts
FHWA	Federal Highway Administration
VPD	Vehicles Per Day
VPH	Vehicles Per Hour
WB	Westbound
yr	Year

EXECUTIVE SUMMARY

The city of Purcell, Oklahoma, is seeking approval to construct a new interchange on I-35, at SH 74. The **Need** for this interchange is that under existing conditions, emergency response times to incidents on I-35 is delayed by the lack of access to I-35 between milepost 91 and 95 near Purcell. The delay in emergency response increases the risk of secondary crashes and in turn causes additional delay to the traveling public, and the **Purpose** of this project is to improve emergency response times to the incidents and reduce delay on I-35.

An Operational and Safety Analysis has been completed, and a National Environmental Policy Act (NEPA) process is underway to evaluate alternatives and address the FHWA 8 Policy Points. The Alternatives Analysis study built upon a feasibility study that was conducted in 2019. Based on the Alternatives Analysis Report the Proposed Action is to provide a new, full movement, diamond interchange at I-35 and SH-74 (West Grant Street) in the city of Purcell, Oklahoma.

Within the study area, I-35 is a four-lane rural Interstate with asphalt pavement in fair to good condition. There are two interchanges serving the city of Purcell that are 4 miles apart. The southern interchange provides full access to I-35 at SH-74 (MP 91), and the other interchange at North Green Avenue (MP 95) provides partial access to I-35 (it is missing the northbound Green Ave to southbound I-35 movement).

Addressing the FHWA Policy Point #1, the existing transportation system is not capable of meeting the primary need of providing an additional access to traffic incidents on I-35 north and south of SH-74 (West Grant Street) and yielding adequate operational and safety benefits of a new interchange. The option best meeting the **Need** is to create a new access point to the Interstate.

Addressing the FHWA Policy Point #2, any transportation system management improvements will not provide quicker access to incidents on I-35, than a new interchange. Traffic and Incident management strategies such as Situational Awareness, emergency median crossing, ITS applications, agency coordination, and Incident Action Plans can be considered as interim or supplemental strategies and be implemented with, or after construction of the new interchange to further enhance response time. However, they cannot address the lack of access that is needed.

Section 1 of this document provides a summary of the Alternatives Analysis Report. The full Alternatives Analysis Report is included in **Appendix A**. Section 2 of this report addresses the FHWA Policy Point #4 regarding Access Connectivity and Design.

This Access Justification Report (AJR) seeks a favorable determination of safety, operations, and engineering acceptability for a new, full movement, diamond interchange to I-35 at SH-74 (West Grant Street) within the city of Purcell, Oklahoma.

1 OPERATIONS AND SAFETY

Per the FHWA Policy on Access to the Interstate System of May 22, 2017, this section of the report addresses the following:

> *"An operational and safety analysis has concluded that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility (which includes mainline lanes, existing, new, or modified ramps, and ramp intersections with crossroad) or on the local street network based on both the current and the planned future traffic projections. The analysis should, particularly in urbanized areas, include at least the first adjacent existing or proposed interchange on either side of the proposed change in access (Title 23, Code of Federal Regulations (CFR), paragraphs 625.2(a), 655.603(d) and 771.111(f)). The crossroads and the local street network, to at least the first major intersection on either side of the proposed change in access, should be included in this analysis to the extent necessary to fully evaluate the safety and operational impacts that the proposed change in access and other transportation improvements may have on the local street network (23 CFR 625.2(a) and 655.603(d)). Requests for a proposed change in access should include a description and assessment of the impacts and ability of the proposed changes to safely and efficiently collect, distribute, and accommodate traffic on the Interstate facility, ramps, intersection of ramps with crossroad, and local street network (23 CFR 625.2(a) and 655.603(d)). Each request should also include a conceptual plan of the type and location of the signs proposed to support each design alternative (23 U.S.C. 109(d) and 23 CFR 655.603(d))."*

1.1 PROJECT DESCRIPTION

I-35 is an Interstate Highway in the central United States, and is a major cross-country, north-south route. It stretches from Laredo, Texas, near the Mexican border to Duluth, Minnesota, at Minnesota State Highway 61 (MN 61, London Road) and 26th Avenue East. The city of Purcell, Oklahoma is located east of I-35 and stretches over approximately nine miles of I-35. The city of Purcell commissioned an Alternatives Analysis Study **(Appendix A)** to assess alternatives for a new interchange on I-35 at SH-74 (West Grant Street). The study area, illustrated in **Figure 1**, consists of a section of I-35 through the city of Purcell extending from south of the interchange at SH-74, Exit 91, to north of interchange at N. Green Avenue, Exit 95. This section of I-35 has an annual average daily traffic (AADT) of 35,504 to 23,486 vehicles per day (VPD), of which approximately 34% is heavy commercial traffic. The supporting transportation network within the study area includes:

Interstate Highway 35 (I-35): I-35 is a north-south interstate also known as the border-to-border highway, stretching from Laredo, Texas to Duluth, Minnesota. The length of I-35 through the study area of Purcell, Oklahoma has 4 lanes total with 2 lanes for traffic traveling northbound and 2 lanes for traffic traveling

southbound. The speed limit of this stretch of I-35 is 70 miles per hour (mph) with a minimum speed of 40 mph.

State Highway 74 (SH-74): SH-74 is an east-west, two lane highway that begins west of I-35 with a speed limit of 55 mph. and then changes to 50 mph as it also becomes concurrent with Green Avenue right before crossing under I-35. The speed limit then drops again to 40 mph before the intersection of West Grant Street and North Green Avenue. SH-74 joins US-77 at the intersection of West Washington Street and is concurrent with South Green Avenue to West Wheedon Blvd. SH-74 and I-35 Interchange is a full diamond interchange at Mile Post 91 utilizing taper ramps on the I-35 exit and entrance ramps. Crossing over I-35, SH-74 is a four-lane divided highway.

US Highway 77 (US 77): US-77 is a north-south highway that, as it enters Purcell, becomes concurrent with North Green Avenue at the intersection of West Washington Street. At the intersection of West Chandler Road/West Wheedon Blvd and South Green Avenue, SH-77 breaks off into its own two-lane highway as it exits Purcell heading southwest

Green Avenue: North and South Green Avenue is a north-south, four-lane road with two lanes in each direction. North Green Avenue begins with a speed limit of 45 mph and drops to 35 south of East Monroe Street before returning to 45 after West Juneau Street. North Green Avenue becomes concurrent with SH-74 at the West Grant Street intersection and adds US-77 at the West Washington Street intersection. On the north, North Green Avenue connects with I-35 one mile north of SH-74 (West Grant Street) at Mile Post 95 via an interchange that misses the northbound to southbound connection.

West Grant Street (SH-74): West Grant Street is a two-lane road that runs east-west in northern Purcell. It is connected to North Green Avenue on the east and to 220th Street on the west in the study area. Speed limit is set to 50 mph west of I-35 and drops to 40 mph before intersecting with North Green Avenue. West Grant Street is designated SH-74 at I-35.

Figure 1. Study Area

1.2 STUDY NEED AND PURPOSE

Need: Under existing conditions, emergency response times to incidents on I-35 is delayed by the lack of access to I-35 between milepost 91 and 95 near Purcell. The delay in emergency response increases the risk of secondary crashes and in turn causes additional delay to the traveling public.

Purpose: The purpose of this project is to improve emergency response times to the incidents and reduce delay on I-35.

1.3 PROPOSED ACTION

The city of Purcell initiated a Transportation Feasibility Study in 2019 followed by an interchange Alternatives Analysis study completed in 2021 to identify opportunities to address emergency response to I-35, general system mobility, and system linkages. Both studies' reports can be found in **Appendix A**. The Proposed Action is a full diamond interchange with I-35 at SH-74 (West Grant Street). The proposed interchange design limits start approximately 3,000 feet south of the existing bridges over SH-74 (West Grant Street) and extends north for approximately 1.3 miles. The existing lane configuration on I-35 consists of two lanes in each direction near SH-74. The proposed improvements will add an additional lane in each direction that lines up with other future lanes. The vertical alignment will be raised over SH-74 to provide a minimum clearance of 16'-9". A diamond interchange will be constructed at SH-74 that will provide all ramp movements. On I-35, the design includes parallel entrance and exit ramps connecting to SH-74. SH-74 will transition within project extents from two lanes to three lanes with a two way left turn lane. The design speed on SH-74 will be 45 mph.

The existing twin parallel bridges on I-35 over SH-74 will be replaced with new twin parallel three (3) span bridges. The proposed bridges will be non-skewed and consist of 220' long (56'-108'-56') slab on girder bridges. The girders will be prestressed concrete beams. Each bridge will contain a 56'-0" clear roadway confined between 42" F-Shaped parapets. The bridges will have conventional reinforced concrete abutments founded on steel H-piles, and reinforced concrete piers founded on drilled shafts. Reinforced concrete slope walls will extend from the abutment bridge seats to the back of curbs on SH-74. The bridges will have a minimum vertical clearance over SH-74 of no less than 16'-9". Each bridge will be constructed in a two-phase construction maintaining two (2) lanes of traffic in both the northbound and southbound directions of I-35 for the duration of the project. The outside regions of the bridges will be constructed first in the sequence. **Figure 2** displays the proposed improvements at the proposed interchange location. The existing signage and signage for the proposed action are shown on **Figure 3**.

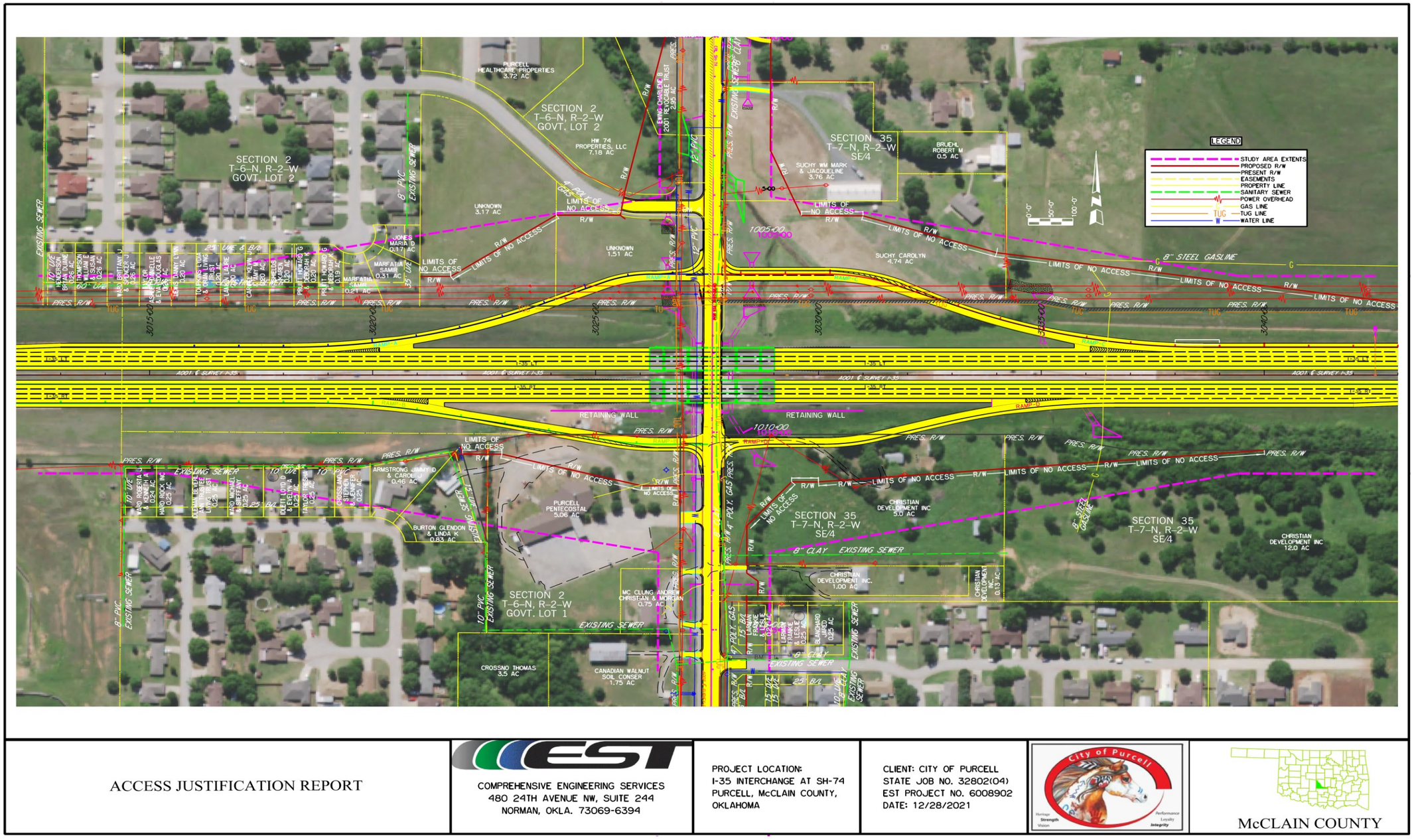
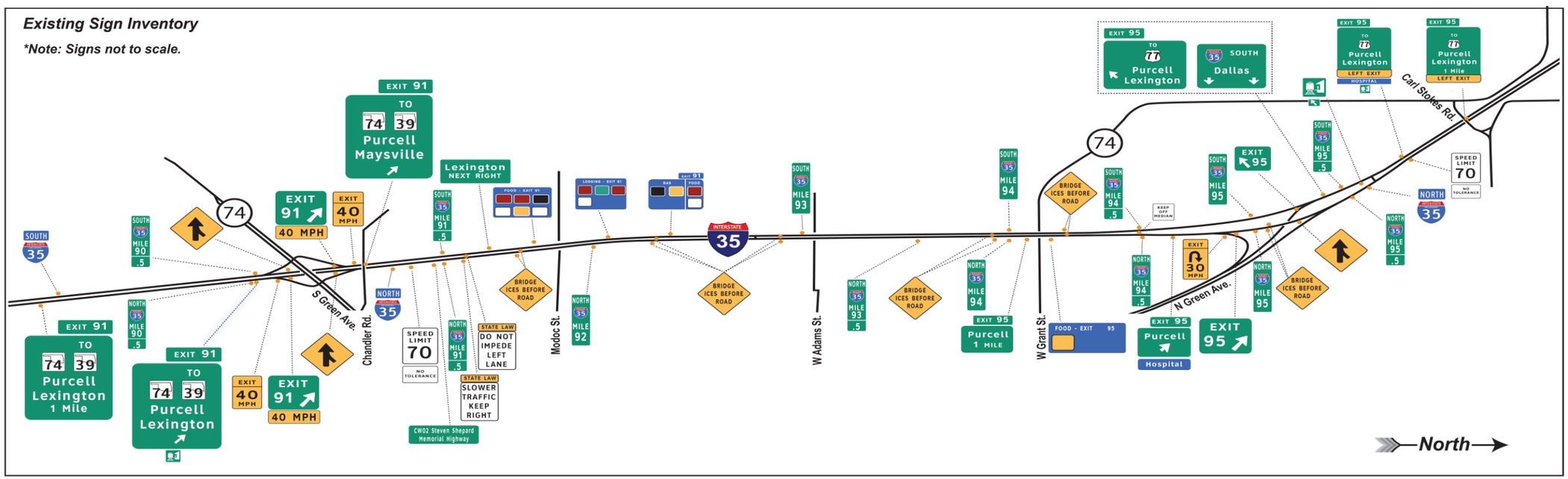


Figure 2. Proposed Action



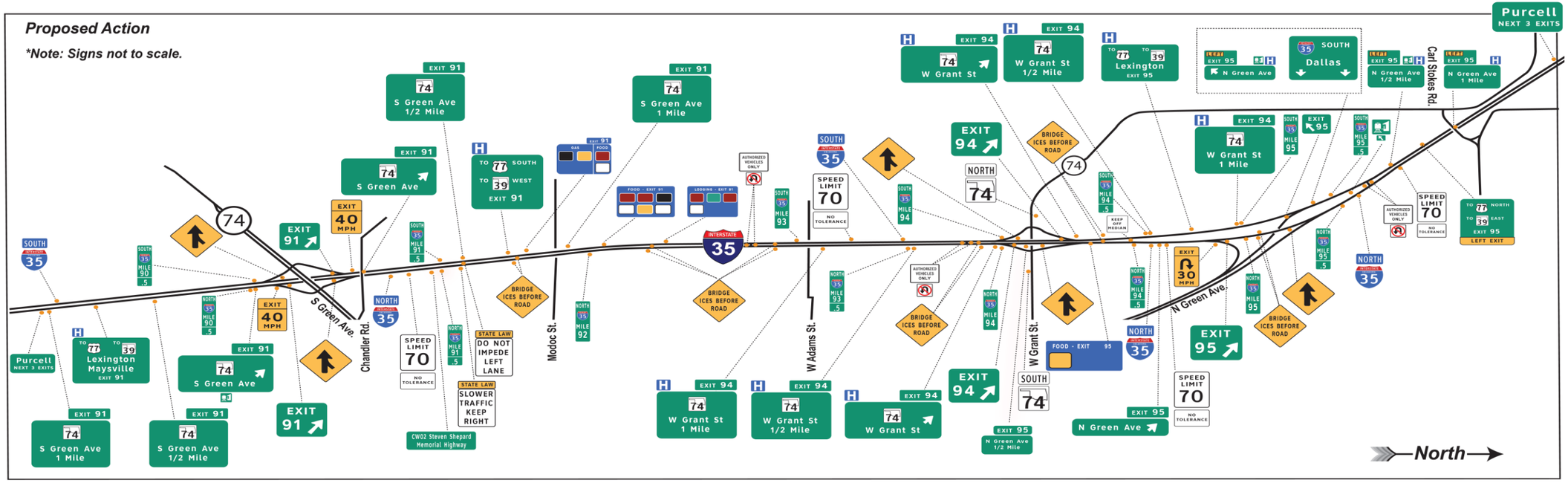


Figure 3. Existing and Proposed Signage

All interchange improvements will meet the design criteria and guidelines as presented in **Table 1** and in accordance with the current editions of AASHTO's A Policy on Geometric Design of Highways and Streets and AASHTO's A Policy on Design Standards—Interstate System.

Table 1- Design Criteria and Guidelines for Interchange Improvements

DESIGN FEATURES	I-35		SH-74		RAMPS	
FUNCTION CLASSIFICATION	INTERSTATE HIGHWAY		URBAN PRINCIPAL ARTERIAL		DIAMOND	
DESIGN SPEED (MPH)	70 MPH		45 MPH		25 MPH	
ADT						
EXISTING (2025)	31,475		3,734		N/A	
FUTURE (2045)	40,086		6,934		739	
% TRUCK (AADT)	34%		1%		N/A	
	ODOT/ AASHTO	PROJECT SPECIFIC	ODOT/ AASHTO	PROJECT SPECIFIC	ODOT/ AASHTO	PROJECT SPECIFIC
STOPPING SIGHT DISTANCE (K-FACTOR)						
CREST	247	256.63	61	83.4	49	58.69
SAG	181	197.53	79	84.84	29	30.45
GRADES						
DESIRABLE MAXIMUM-LEVEL TERRAIN	3.00%	3.00%	6.00%	4.54%	0.00%	5.13%
DESIRABLE MINIMUM-LEVEL TERRAIN (DES/MIN)	0.00%	0.00%	0.50%	0.23%	0.00%	0.83%
HORIZONTAL CURVES						
MINIMUM RADIUS	2040	N/A	587	1190	144	292
MINIMUM RADIUS W/O SUPER	14100	11459.16	6480	6480	7870	N/A
PAVEMENT CROSS-SLOPE						
MAINLINE	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
SHOULDERS	2%-4%	2.00%	2.00%	2.00%	2.00%	2.00%
MAXIMUM SUPERELAVATION RATE	Emax = 6%	Emax = 6%	Emax = 6%	Emax = 6%	Emax = 6%	Emax = 6%
SUPERELEVATION (Ed)	6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
LANE WIDTH	12	12	12	12	15	15
SHOULDER WIDTH	10	10	N/A	N/A	8	8
HORIZONTAL CLEARANCE (CLEAR ZONE)						
DESIRABLE MINIMUM W/6:1	30-34	30	16-18	16	18-20	20
DESIRABLE MINIMUM W/4:1 TO 5:1	38-46	30	20-26	20	20-26	20
INTERSECTION SIGHT DISTANCE	N/A	N/A	500	500	335	335

1.4 OPERATIONAL ANALYSIS - EXISTING + COMMITTED NETWORKS

This section provides a summary of the roadway operation analysis results for the 2020, as well as 2045 design traffic on the existing + committed roadway network.

1.4.1 Traffic Data – 2020 and 2045

2020 and 2045 design traffic data were developed using the 2020 raw data collected on Tuesday June 16, 2020, within the study area. To develop 2020 design traffic data a seasonal adjustment factor, an axel adjustment factor, and a COVID-19 adjustment factor, (provided by ODOT on 6/29/2020) were applied to the raw data. Then, the 2020 design data was adjusted and balanced to meet the K and D factors provided by ODOT. Annual growth rates recommended by ODOT were applied to 2020 design traffic data to project the future design traffic volumes for the 2045. The memo presenting the methodology and assumptions used to develop the traffic data is provided in **Appendix B.**

2020 raw traffic data on the existing roadway network is presented on **Figure 4.**

2020 and 2045 design traffic data for the existing network are shown on **Figure 5** and **Figure 6**, respectively.

Note*: there are no known "committed" projects in 2045 in the study area.*

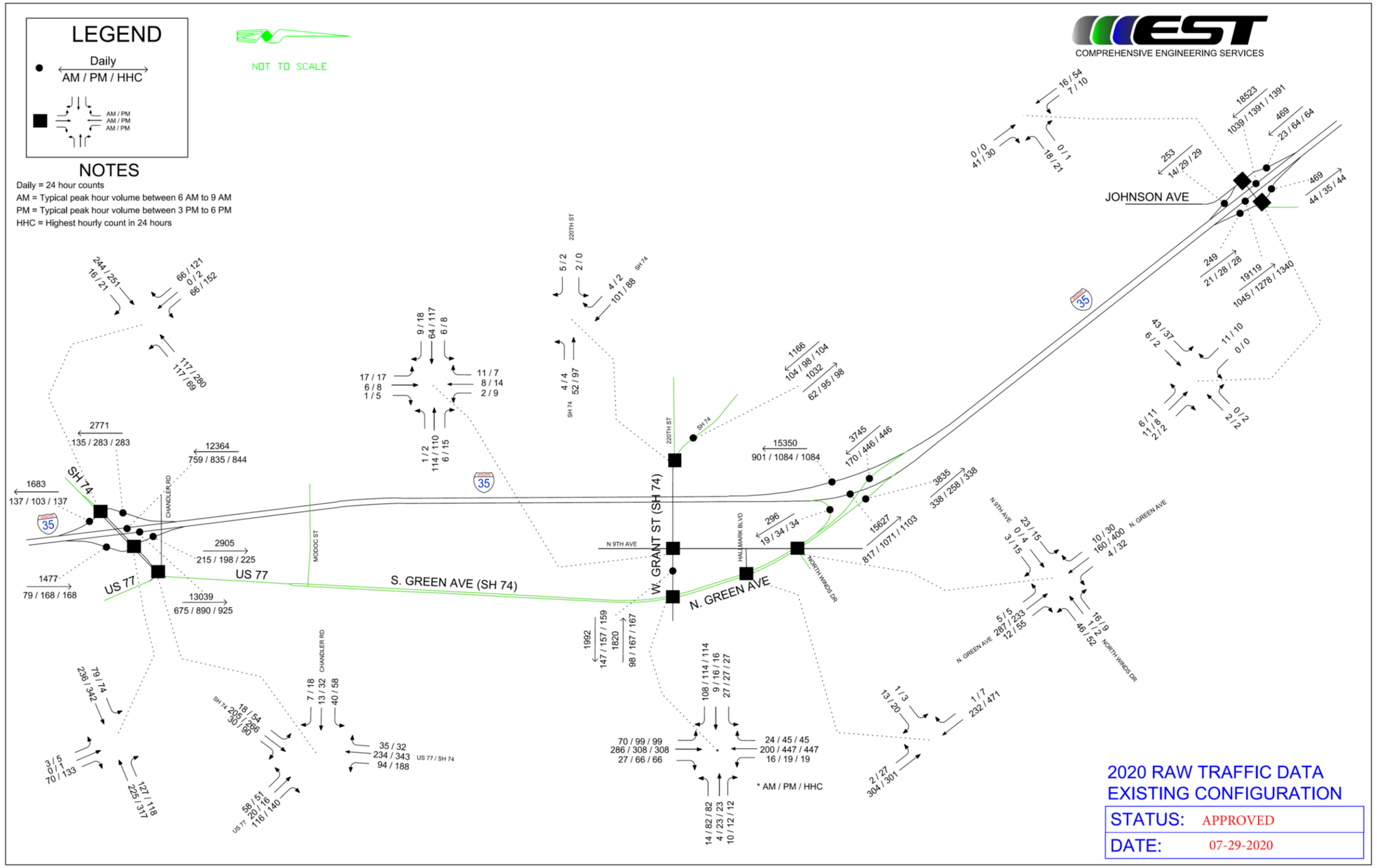


Figure 4. 2020 Raw Traffic Data – Existing Network

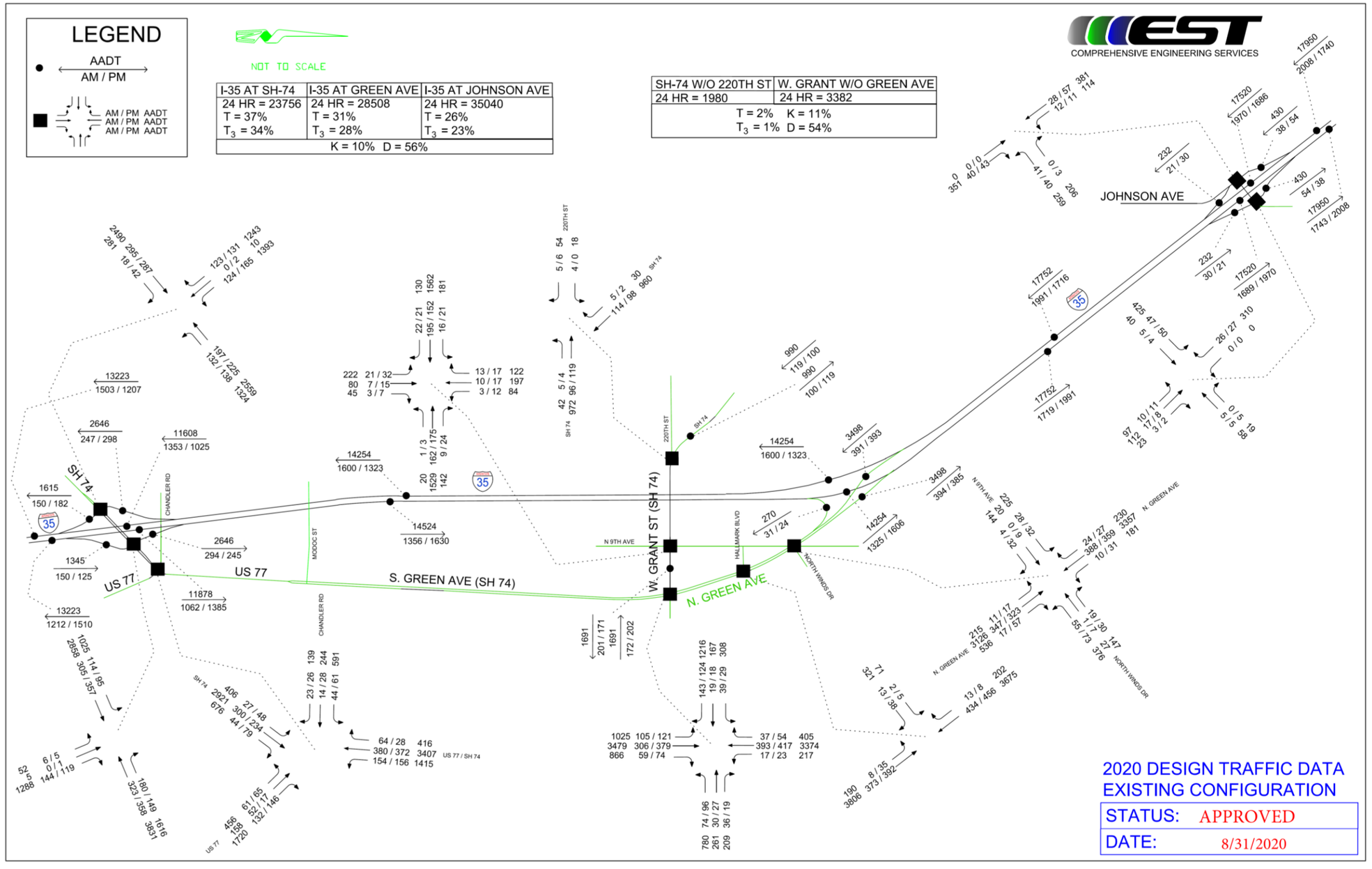


Figure 5. 2020 Design Traffic Data – Existing Network

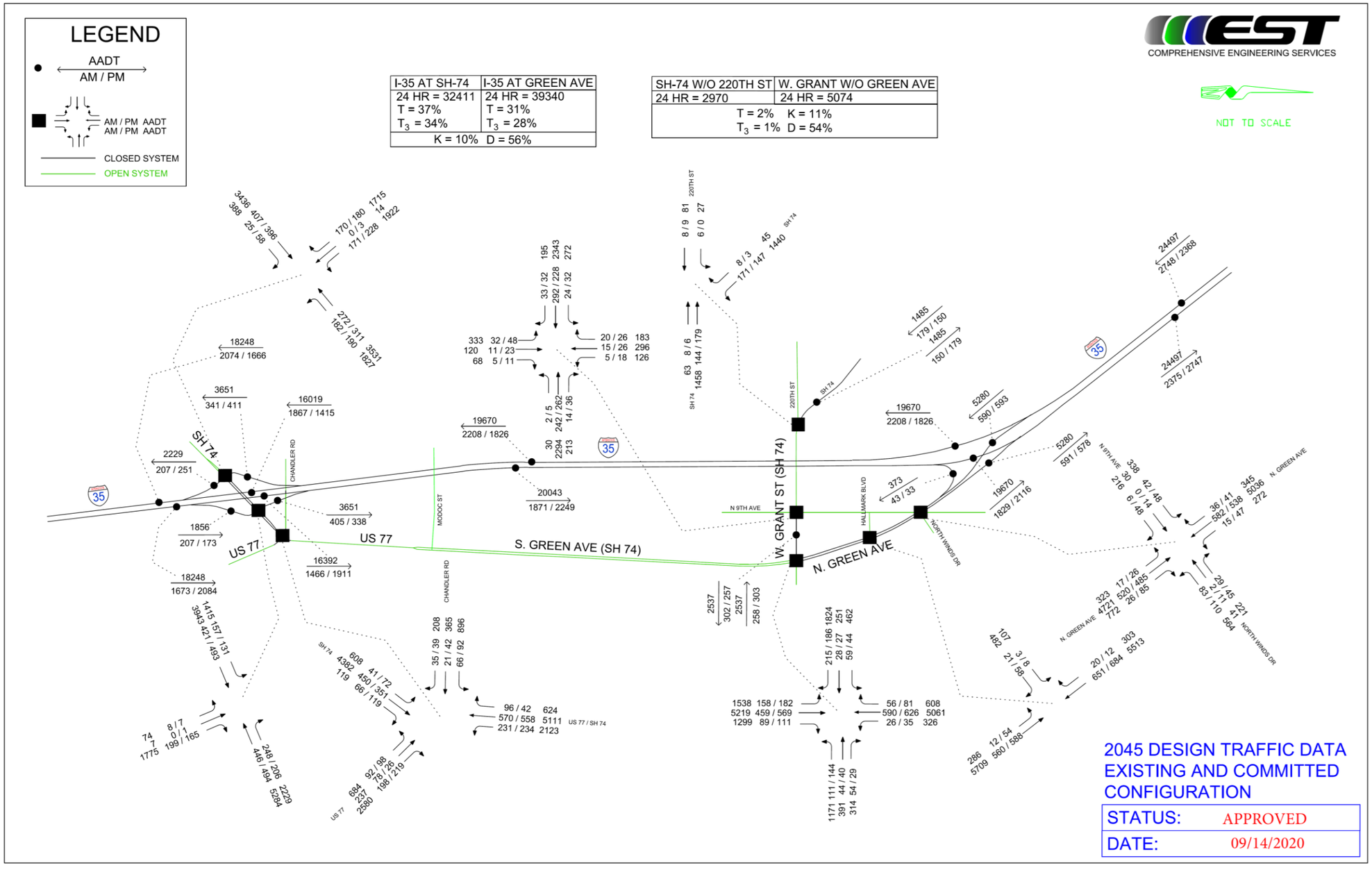


Figure 6. 2045 Design Traffic Data – Existing + Committed Network

1.4.2 Intersection Analysis

Synchro/SimTraffic 10 software (Synchro), which is based on the Highway Capacity Manual (HCM), 6th Edition (Transportation Research Board [TRB], 2016), was used for intersection Level of Service (LOS) analysis. Synchro analysis reports are included in the Alternative Analysis Report in **Appendix A**. According to the Synchro analysis results summarized in **Figure 7**, all signalized intersections and critical approaches at two-way stop controlled (TWSC) intersections currently (2020) operate at LOS C or better during both AM and PM peak hours. The results of LOS analysis for the 2045 design traffic on existing + committed network shows that the TWSC intersection at SH-74 & SB I-35 off ramp (Exit 91) operates at the LOS F for the southbound approach during AM and PM peak hours. The rest of the intersections operate at the LOS C or better during both morning and afternoon peak hours.

Table 2- LOS and Delay for Signalized Intersections and Critical Approaches at TWSC Intersections (2020-2045 Design Traffic on the Existing Network)

	2020 Existing Network				2045 Existing Network			
Signalized Intersections								
Location	**AM**		**PM**		**AM**		**PM**	
	LOS	**Delay (veh-hr)**	**LOS**	**Delay (veh-hr)**	**LOS**	**Delay (veh-hr)**	**LOS**	**Delay (veh-hr)**
North Winds Dr. & N. Green Ave.	B	2.5	B	2.9	B	4.0	B	4.8
SH-74 (W. Grant St.) & N. Green Ave.	B	3.6	B	4.3	B	7.8	B	8.5
US 77, SH-74 & S. Green Ave. (SH-74)	B	4.2	B	4.0	B	7.2	B	7.8
Total Signalized Delay (veh-hr)	**10.3**		**11.2**		**19.0**		**21.1**	
TWSC Intersections								
Location	**LOS***	**Delay (veh-hr)+**	**LOS***	**Delay (veh-hr)+**	**LOS***	**Delay (veh-hr)+**	**LOS***	**Delay (veh-hr)+**
SH-74 (W. Grant St.) & 9th Ave.	B	0.2	B	0.3	C	0.3	C	0.7
SH-74 & SB I-35 off ramp (Exit 91)	C	1.6	C	2.2	F	5.8	F	13.8
SH-74 & NB I-35 off ramp (Exit 91)	B	0.8	B	0.6	B	1.2	B	1.0
SH-74 (W. Grant St.) & 220th St.	A	0.0	A	0.0	B	0.0	A	0.0
N. Green Ave. & Halmark Blvd.	B	0.1	B	0.2	B	0.1	B	0.5
Total TWSC Approach Delay (veh-hr)	**2.7**		**3.3**		**7.4**		**16.0**	
Total Intersection Delay (veh-hr)	**13.0**		**14.5**		**26.4**		**37.1**	

*Critical approach only
+Entire Intersection, including uncontrolled movements

1.4.3 Highway Facility Level of Service (LOS) Analysis

For this analysis the highway capacity software (HCS 7), which is based on the highway capacity manual (HCM) 6th edition, was used. **Figure 7** shows the HCS analysis results for 2020 and 2045 Design Traffic for the existing + committed freeway facilities on I-35 from SH-74 (Exit 91) to N. Green Ave (Exit 95). The analysis includes freeway facilities which have influence areas of merge and diverge roadway segments. The analysis results in a LOS D and better on this facility during both AM and PM peak hours.

Table 3- AM/PM Peak Hour Segment LOS for I-35 (2020-2045 Design Traffic on the Existing Network)

Roadway Facility (Freeway)	Direction	2020 Existing Network				2045 Existing + Committed Network			
		AM		PM		AM		PM	
		Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS
I-35 from SH-74 (south) to N. Green Ave	NB	13.8	B	16	C	18.9	C	22.5	D
	SB	16.9	C	12.8	B	23.4	D	17	C

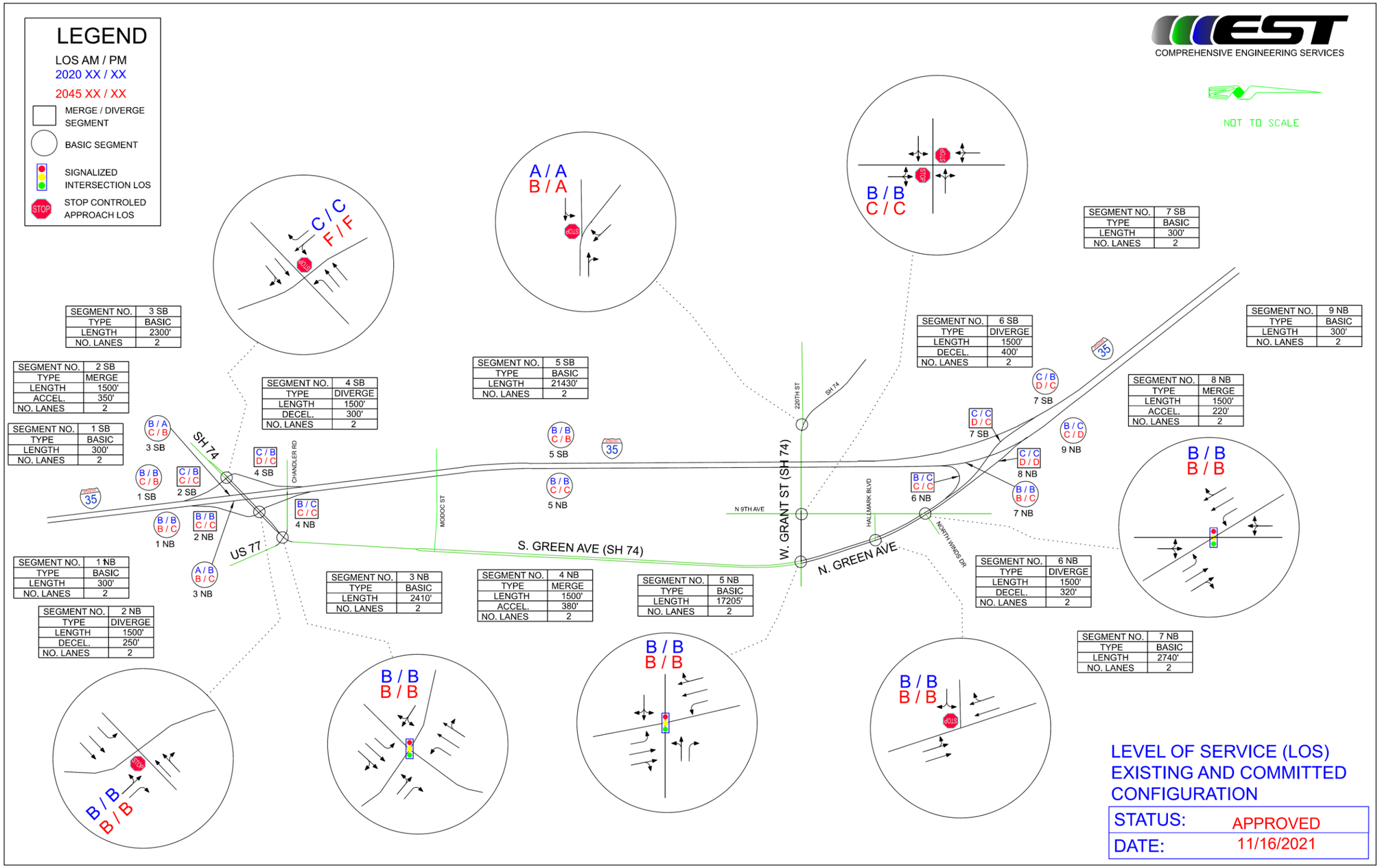


Figure 7. Summary of LOS Analysis for 2020 and 2045 Existing Network

1.5 OPERATIONAL ANALYSIS – PROPOSED ACTION

This section presents the design traffic data and the results of intersection and segment operational analysis for the "Proposed Action".

1.5.1 Traffic Data –2045 Proposed Action

Because on the new Proposed Action network and connectivity arrangements, it is anticipated that travelers will adjust their trip routes, accordingly. This causes changes in travel demand on the Proposed Action network. To account for these anticipated changes in travel demand, trips were "re-assigned" to appropriate and logical routes**. Figure 8** shows estimated traffic volumes for the Proposed Action, considering the 2045 design traffic data.

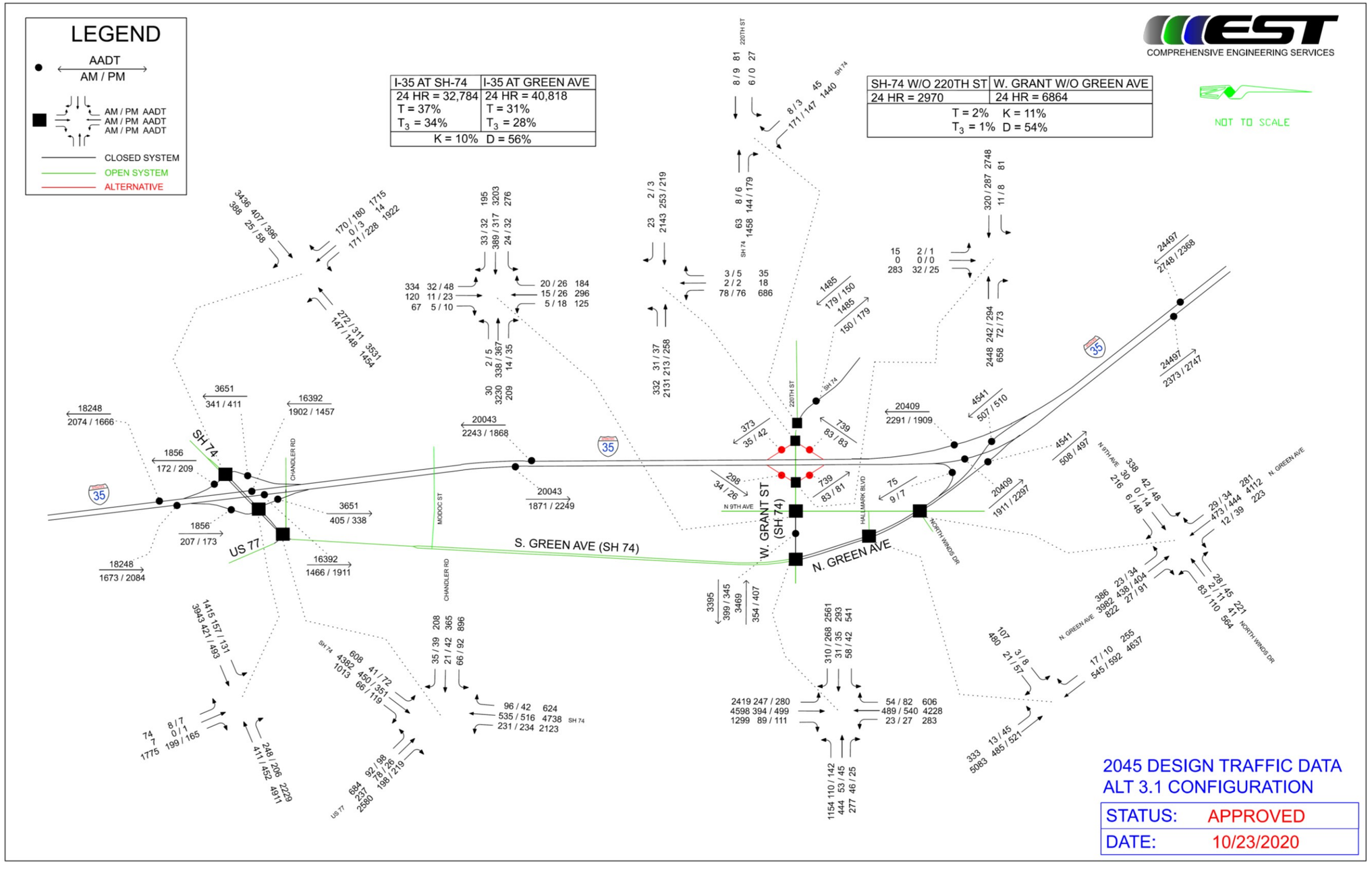


Figure 8. 2045 Proposed Action (Alternative 3.1) Design Traffic Data

1.5.2 Intersection Analysis

Results of the LOS analysis for the signalized intersections and critical approaches at TWSC intersections for the Proposed Action is summarized in **Figure 9**. According to these results, all signalized intersections in the Proposed Action operate at LOS B during both AM and PM peak hours. Except at SH 74 & SB I-35 ramp terminal intersection, critical approaches at all other TWSC intersections operate at LOS D or better during AM and PM peak hours. According to the Synchro results from the proposed action, the LOS of the critical approach (southbound) at the TWSC intersection at SH-74 and SB I-35 ramp terminal, improved to LOS E (from LOS F in 2045 Existing + Committed Network) during the AM peak hour.

As expected, intersection delay at SH-74 (West Grant Street) and Green Avenue intersection increases for the proposed action compared to 2045 Existing + Committed network. This is due to traffic reassignment which directed more traffic to access I-35 through this intersection.

Table 4- LOS and Delay for Signalized Intersections and Critical Approaches at TWSC Intersections (2045 Design Traffic on the Existing and Proposed Networks)

	2045 Existing Network				2045 Proposed Network			
Signalized Intersections								
Location	**AM**		**PM**		**AM**		**PM**	
	LOS	**Delay (veh-hr)**	**LOS**	**Delay (veh-hr)**	**LOS**	**Delay (veh-hr)**	**LOS**	**Delay (veh-hr)**
North Winds Dr. & N. Green Ave.	B	4	B	4.8	B	3.4	B	4.1
SH-74 (W. Grant St.) & N. Green Ave.	B	7.8	B	8.5	B	7.1	B	9.2
US 77, SH-74 & S. Green Ave. (SH-74)	B	7.2	B	7.8	B	6.9	B	7.7
Total Signalized Delay (veh-hr)	**19**		**21.1**		**17.4**		**21**	
TWSC Intersections								
Location	**LOS***	**Delay (veh-hr)+**	**LOS***	**Delay (veh-hr)+**	**LOS***	**Delay (veh-hr)+**	**LOS***	**Delay (veh-hr)+**
SH-74 (W. Grant St.) & 9th Ave.	C	0.3	C	0.7	C	0.4	D	0.9
SH-74 & SB I-35 off ramp (Exit 91)	F	5.8	F	13.8	E	3.8	F	8.1
SH-74 & NB I-35 off ramp (Exit 91)	B	1.2	B	1	B	1.2	B	1
SH-74 (W. Grant St.) & 220th St.	B	0	A	0	B	0	A	0
N. Green Ave. & Halmark Blvd.	B	0.1	B	0.5	B	0.1	B	0.4
SH-74 (W. Grant St.) & NB I-35 Off-Ramp	N/A				B	0.1	B	0.1
SH-74 (W. Grant St.) & SB I-35 Off-Ramp	N/A				A	0.2	A	0.2
Total TWSC Approach Delay (veh-hr)	**7.4**		**16**		**5.8**		**10.7**	
Total Intersection Delay (veh-hr)	**26.4**		**37.1**		**23.2**		**31.7**	

*Critical approach only

+Entire Intersection, including uncontrolled movements

1.5.3 Freeway Facility Level of Service (LOS) Analysis (Existing Network)

According to the HCS analysis, the facility LOS for the proposed action stay the same level as 2045 existing + committed network (between C and D) during the AM and PM peak hours in both northbound and the southbound directions as shown in **Table 5.**

Table 5- AM/PM Peak Hour Segment LOS for I-35 (2045 Design Traffic on the Existing AND Proposed Networks)

Roadway Facility (Freeway)	Direction	2045 Existing + Committed Network				2045 Proposed Network			
		AM		PM		AM		PM	
		Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS	Density pc/mi/ln	LOS
I-35 from SH-74 (south) to N. Green Ave	NB	18.9	C	22.5	D	19.2	C	23	D
	SB	23.4	D	17	C	23.6	D	17.5	C

The results of the intersection and segment operational analysis using Synchro 10 and HCS7 for the "Proposed Action" (full interchange at SH-74 (West Grant Street)) keeping the I-35 NB off-ramp to N. Green Avenue (referred to as Alternative 3.1 in the Alternative Analysis Report) are shown on **Figure 9.**

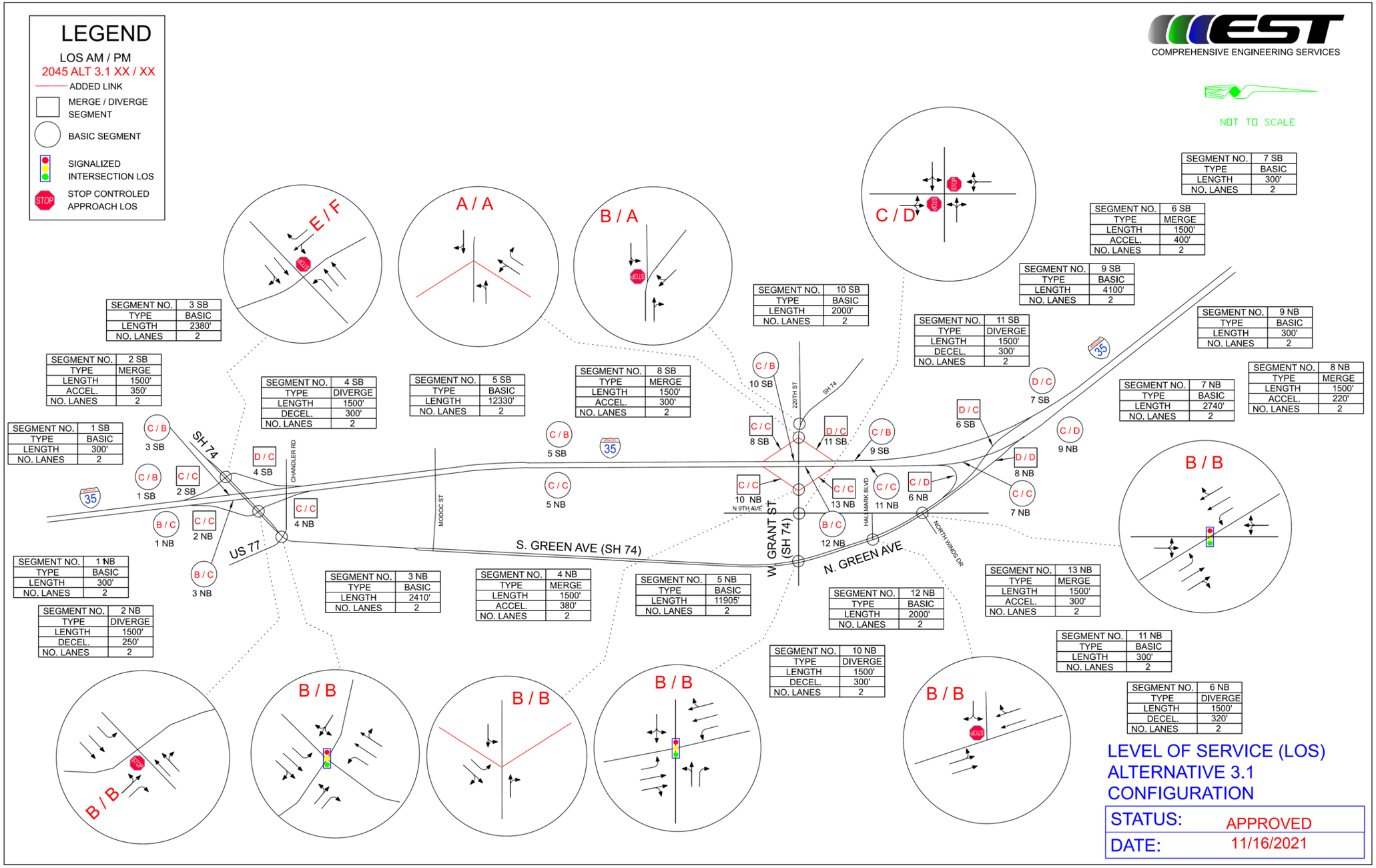


Figure 9. Proposed Action (Alternative 3.1) – Summary of 2045 LOS

1.6 SAFETY ANALYSIS

This section presents an analysis of historical crash data collected from the Oklahoma State safety website, SAFE-T: Statewide Analysis for Engineering & Technology, and 2045 crash prediction analysis.

1.6.1 Crash Analysis

The I-35 Segment, which extends from south of SH-74 (Exit 91) to north of N. Green Avenue (Exit 95), is approximately 5 miles in length. From the 2020 Design Traffic Data, this segment of roadway has an approximate AADT of 35,504 to 23,486 (see. **Figure 5**).

A total of 315 crashes were reported from January 2015 to December 2019 in this segment of I-35. **Table 6** shows the number of total and interchange related crashes between 2015 and 2019 along this corridor. I-35 at SH 74 (Exit 91) and I-35 at North Green Ave (Exit 95) are the two existing interchanges along this corridor. A total of 28 crashes were related to the interchanges, which accounted for 9 % of the total 315 crashes.

Table 6- Number of Total and Interchange-Related Crashes by Year-2015-2019 - I-35 Segment

Year	No. of Total Crashes	No. of Interchange Related Crashes
2015	55	6
2016	50	3
2017	114	9
2018	52	7
2019	44	3
Total	**315**	**28**

A total of 200 crashes consisting of rear-end, front of barrier cable, and sideswipe same direction were the prevalent crash types along the corridor and accounted for 63% of the 315 total crashes. Rear-end and sideswipe same direction crashes are generally associated with congested conditions and are known to occur for reasons, such as following too close, inattention, and improper lane changes. Front of barrier cable crashes can be associated with driver inattention,

poor visibility due to weather conditions, and nighttime driving. Total number of crashes by crash type in the study area are shown in **Table 7**. Interchange related crashes by severity and type are summarized in **Table 8** .

Table 7- Number of Crashes by Crash Type (2015-2019)-I-35 Segment

Crash Type	No. of Crashes	Percentage
REAR-END	104	33%
OTHERS	72	23%
F-O Barr Cable	42	13%
SIDESWIPE-SAME	54	17%
ROLLOVER	19	6%
RIGHT-ANGLE	16	5%
ANGLE TURNING	8	3%
Total	**315**	**100%**

Table 8- Number of total Crashes, Severity, and Crash Types of Interchange-Related Crashes-2015-2019 - I-35 Segment

Location	No. of Interchange Related Crashes	Severity			Crash Type				
		No. of Injured	No. of Fatalities	PDO	Rear End	Right Angle	Side Swipe Same	Rollover	Angle Turning
I-35 at SH 74	26	10	0	16	4	15	0	1	6
I-35 at N. Green Ave.	2	0	1	1	0	1	0	0	1
Total	**28**	**10**	**1**	**17**	**4**	**16**	**0**	**1**	**7**

According to the AASHTO Highway Safety Manual (HSM), crash frequency and crash rate are the fundamental basis for safety analysis. In the HSM, "crash frequency" is defined as the number of crashes occurring at a particular site, facility, or network in a one-year period. Crash frequency is calculated according to the following Equation and is measured in number of crashes per year (HSM 2010)

$$Crash\ Frequency = \frac{\text{Number of Crashes}}{\text{Period in Years}}$$

"Crash Rate" is the number of crashes that occur at a given site during a certain time period in relation to a particular measure of exposure (e.g., per million vehicle miles of travel for a roadway segment or per million entering vehicles for an intersection.) Crash Rates are calculated according to the following "Equation 3-2 in HSM 2010".

$$Crash\ Rate = \frac{\text{Avergae Crash Frequency in a Period}}{\text{Exposure in Same Period}}$$

Table 9 shows Average Crash Frequency and Crash Rate for I-35 segments for a duration of 5 years (from the year of 2015 to 2019). To calculate average exposure, 2020 AADT was applied from 2020 Design Traffic Data. Considering a 1.5% annual growth rate, average exposure for year of 2015 to 2019 was calculated using 2020 AADT.

From **Table 9**, the I-35 segment between N. Green Ave and SH-74 has the highest number of crashes of 180, which account for 57 percent of 315 crashes total. The I-35 and SH-74 interchange (south of the corridor) has the highest exiting/entering volumes, which ranges from 1615 to 2646 vehicles per day along this segment. The high volume at this interchange accounts for the higher crash rate.

Table 9- Crash Rate and crash frequency /Year-2015-2019 - I-35 Segment

Location	No. of Crashes	Avg. Crash Frequency	Avg Exposure	Crash Rate
I-35 South of SH 74 (M.P. 7.87-9.07)	27	5.4	12	0.45
I-35 at SH 74. between Ramps (M.P 9.12 - 9.55)	79	15.8	7.54	2.09
I-35 between Green &. SH 74 (M.P 9.56-13.88)	180	36	87.41	0.41
I-35 North of Green (M.P 13.95-15.09)	29	5.8	29.25	0.20
Total NO. of Crashes	**315**			

1.6.2 Crash Prediction Evaluation

The Interactive Highway Design Model (IHSDM 2017 Release, v13.1.0) software, which is designed based on the HSM methodology was utilized to evaluate the 2045 crash prediction for Existing + Committed Network and the 2045 Proposed Action. The 2045 Crash Prediction reports are provided in **Appendix C**. The HSM methodology used to evaluate the Crash Prediction on I-35 within the study corridor. The analysis was performed based on the following configurations:

Policy for Superelevation: AASHTO 2011 U.S. Customary
Calibration: HSM Configuration
Crash Distribution: HSM Configuration
Model/CMF: HSM Configuration
First Year of Analysis: 2045
Last Year of Analysis: 2045
Empirical-Bayes Analysis: None

The result of the evaluation is summarized in **Table 10** and **Table 11.** The results of the evaluation show the new access will not have any adverse effect on safety in this corridor.

Table 10- 2045 Predicted Freeway Crash Rates and Frequencies Summary (Freeway Segments)

	2045 Existing + Committed	2045 Proposed Action
Total Crashes	**32.55**	**32.44**
Crash Reduction	0	0.11
Effective Length (mi)	4.8864	4.7348
Fatal and Injury Crashes	10.76	10.69
Property-Damage- Only Crashes	21.8	21.75
Percent Fatal and Injury Crashes (%)	33	33
Percent Property-Damage- Only Crashes (%)	67	67
Crash Rate (crashes/mi/yr)	6.6618	6.8508
Fatal and Injury Crash Rate (crashes/mi/yr)	2.2013	2.2573
PDO Crash Rate (crashes/mi/yr)	4.4605	4.5935

Table 11- 2045 Predicted Freeway Speed Change Lane Crash Rates and Frequencies Summary

	2045 Existing + Committed	2045 Proposed Action
Total Crashes	**1.99**	**3.30**
Crash Increase	0	1.31
Effective Length (mi)	0.4545	0.7576
Fatal and Injury Crashes	0.62	0.97
Property-Damage- Only Crashes	1.37	2.32
Percent Fatal and Injury Crashes (%)	31	30
Percent Property-Damage- Only Crashes (%)	69	70
Crash Rate (crashes/mi/yr)	4.3757	4.3523
Fatal and Injury Crash Rate (crashes/mi/yr)	1.3622	1.2844
PDO Crash Rate (crashes/mi/yr)	3.0134	3.0679

The analysis shows a decrease in total crashes, fatal and injury crashes, and property damage crashes in freeway segments and a slight increase in total crashes in speed change segments. Although the total number of crashes in freeway segments in 2045 proposed action is less than the total number of crashes in 2045 existing + committed network, crash rates are slightly higher. This is due to adding the interchange at SH-74 (West Grant Street) resulted in shorter freeway segments in the corridor. Despite the larger number of crashes within the speed change segments, total crash rate shows a very slight decrease (from 4.3757 to 4.3523). This is due to the greater length of speed change segments after adding an interchange at SH-74 (West Grant Street). Below is the description of the IHSDM methodology which was the basis for the crash rate calculation:

Crash Rate (Crashes / mi / yr.) = (Total number of Crashes / Segments length/# of Years).

Total length of the corridor in the crash prediction analysis stays the same in both Existing + Committed and Proposed Action networks.

Total length of Corridor *= total freeway segments length* + (*speed-change lanes length/2*)

2045 Existing + Committed Corridor length = 4.8864 + (0.4545 / 2) = 5.11 mi

2045 Proposed Action Corridor length = 4.7348 + (0.7576 / 2) = 5.11 mi

Direct results from IHSDM shows an increase of total of 1.2 crashes for freeway and speed change segments per year for the proposed action (1.31 crash increase on speed change segments and 0.11 crash decrease on freeway segments). However, IHSDM freeway crash prediction module is designed following HSM, Chapter 3 which does not consider the probability of secondary crash reduction. The benefit of the proposed action is in reducing the probability of secondary crashes due to reduced response time to incidents. The Alternative Analysis Report (**Appendix A**) shows that there is an estimated saving of 2.5 secondary crashes per year. Therefore, estimated crash reduction for the proposed action accounting for secondary crash reduction is 1.3 (2.5 – 1.2) crashes per year (**Table 12**).

Table 12- Predicted Crash Reduction in 2045 Proposed Action Accounting for Secondary Crash Reduction

	2045 Existing + Committed	**2045 Proposed Action**
IHSDM Total Crashes per Year (Freeway + Speed Change)	34.54 (32.55 + 1.99)	35.74 (32.44+3.3)
Total Crashes per Year (Freeway + Speed Change) accounting for Secondary Crash Reduction	34.54	33.24 (35.74 – **2.5**)
Estimated Total Crash Saving Per Year	**0**	**1.3** (34.54 - 33.24)

2 ACCESS CONNECTIONS AND DESIGN

Per the FHWA Policy on Access to the Interstate System of May 22, 2017, this section of the report addresses the following:

"The proposed access connects to a public road only and will provide for all traffic movements. Less than "full interchanges" may be considered on a case-by-case basis for applications requiring special access, such as managed lanes (e.g., transit or high occupancy vehicle and high occupancy toll lanes) or park and ride lots. The proposed access will be designed to meet or exceed current standards (23 CFR 625.2(a), 625.4(a)(2), and 655.603(d)). In rare instances where all basic movements are not provided by the proposed design, the report should include a full-interchange option with a comparison of the operational and safety analyses to the partial-interchange option. The report should also include the mitigation proposed to compensate for the missing movements, including wayfinding signage, impacts on local intersections, mitigation of driver expectation leading to wrong-way movements on ramps, etc. The report should describe whether future provision of a full interchange is precluded by the proposed design."

This proposed action provides a full movement, diamond interchange to I-35 at SH-74 (West Grant Street), which is a public record. Preliminary cost estimate for the proposed action interchange is provided in **Table 13.**

Table 13- Preliminary Cost Estimate for the Proposed Action Interchange

Component		Total ($)
Roadway		$17,070,000
Surfacing	$8,530,000	
Earthwork	$3,960,000	
Drainage Structures	$3,110,000	
Erosion Control	$610,000	
Miscellaneous Items	$860,000	
Bridge		$4,850,000
Bridge 'A'	$690,000	
Bridge 'B'	$2,080,000	
Bridge 'C'	$2,080,000	
Retaining Wall		$740,000
Traffic		$3,840,000
Signing and Striping	$1,280,000	

	Traffic Control	$2,560,000	
		Subtotal ($)	**$26,500,000**
Staking			$270,000
Mobilization			$1,130,000
6% for E&C			$1,590,000
		Total ($)	**$29,490,000**

APPENDIX A: ALTERNATIVE ANALYSIS REPORT (2021)/ TRANSPORTATION FEASIBILITY STUDY REPORT (2019)

Comprehensive Engineering Services

PREPARED FOR:

City of Purcell, Oklahoma

Oklahoma Department of Transportation (ODOT)

Alternatives Analysis Report - November 12, 2021

I-35 Interchange Access at W. Grant Street (SH-74)

CITY OF PURCELL, OKLAHOMA

EST, Inc.
615 N Hudson Avenue, Suite 300
Oklahoma City, OK 73102

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ABBREVIATIONS

AADT	Annual Average Daily Traffic
ATRI	American Transportation Research Institute
Ave	Avenue
Blvd	Boulevard
ODOT	Oklahoma Department of Transportation
EB	Eastbound
FHWA	Federal Highway Administration
HCS	Highway Capacity Software
HCM	Highway Capacity Manual
HHC	Highest Hourly Count
I	Interstate Highway
LOS	Level of Service
mph	Miles per Hour
NB	Northbound
SB	Southbound
SH	State Highway
TMC	Turning Movement Counts
TTI	Text Transportation Institute

TWSC	Two Way Stop Controlled
vpd	Vehicles Per Day
vph	Vehicles Per Hour
WB	Westbound

1 INTRODUCTION

1.1 Study Area

I-35 is an Interstate Highway in the central United States. As with most interstates with a number that ends in a five, it is a major cross-country, north-south route. It stretches from Laredo, Texas, near the Mexican border to Duluth, Minnesota, at Minnesota State Highway 61 (MN 61, London Road) and 26th Avenue East. The City of Purcell, Oklahoma is located east of I-35 and stretches over approximately nine miles of I-35. This section of I-35 has an average annual daily traffic (AADT) of 21,000 vehicles per day (vpd), of which approximately 34% is heavy commercial traffic.

The City of Purcell commissioned this Alternatives Analysis Report to assess alternatives for a new interchange on I-35 at W. Grant Street (SH 74). The study area, illustrated in **Figure 1,** consists of a five-mile section of I-35 through the City of Purcell, bounded by the interchange at N. Green Avenue, Exit 95, on the north, and the interchange with SH-74, Exit 91, on the south.

Figure 1. Study Area

1.2 Purpose and Need

1.2.1 Need

Under existing conditions, emergency response times to incidents on I-35 is delayed by the lack of access to I-35 between milepost 91 and 95 near Purcell. The delay in emergency response increases the risk of secondary crashes and in turn causes additional delay to the traveling public.

1.2.2 Purpose

The purpose of this project is to improve emergency response times to the incidents and reduce delay on I-35.

2 TRAFFIC DATA DEVELOPMENT

This section presents traffic data developed for the 2020 and 2045 design years based on traffic counts collected on Tuesday June 16, 2020, within the study area. The methodology and assumptions used to develop the traffic data was summarized in a memorandum included in **Appendix A.**

2.1 Raw Traffic Data

Below is a description of the types of 2020 raw traffic data collected within the study area:

- **24-Hour Directional** counts on I-35 mainline, on/off ramps, and W. Grant Street (19 locations)
- **Traffic Movement Count (24-Hour TMC)** at the intersection of N. Green Avenue and W. Grant Street (1 intersection)
- **Typical AM/PM Peak TMC** during 6:00 AM to 9:00 AM and 3:00 PM to 6:00 PM time periods (9 intersections)

It was observed that at several locations the Highest Hourly Count (HHC) determined from the 24-Hour traffic counts did not fall into typical AM/PM time periods. During the development of "Design" traffic data for the existing + committed Network, AM/PM peak volumes were adjusted to reflect the HHC condition, as described in **Appendix A.**

2020 raw traffic data on the existing roadway network is presented on **Figure 2.**

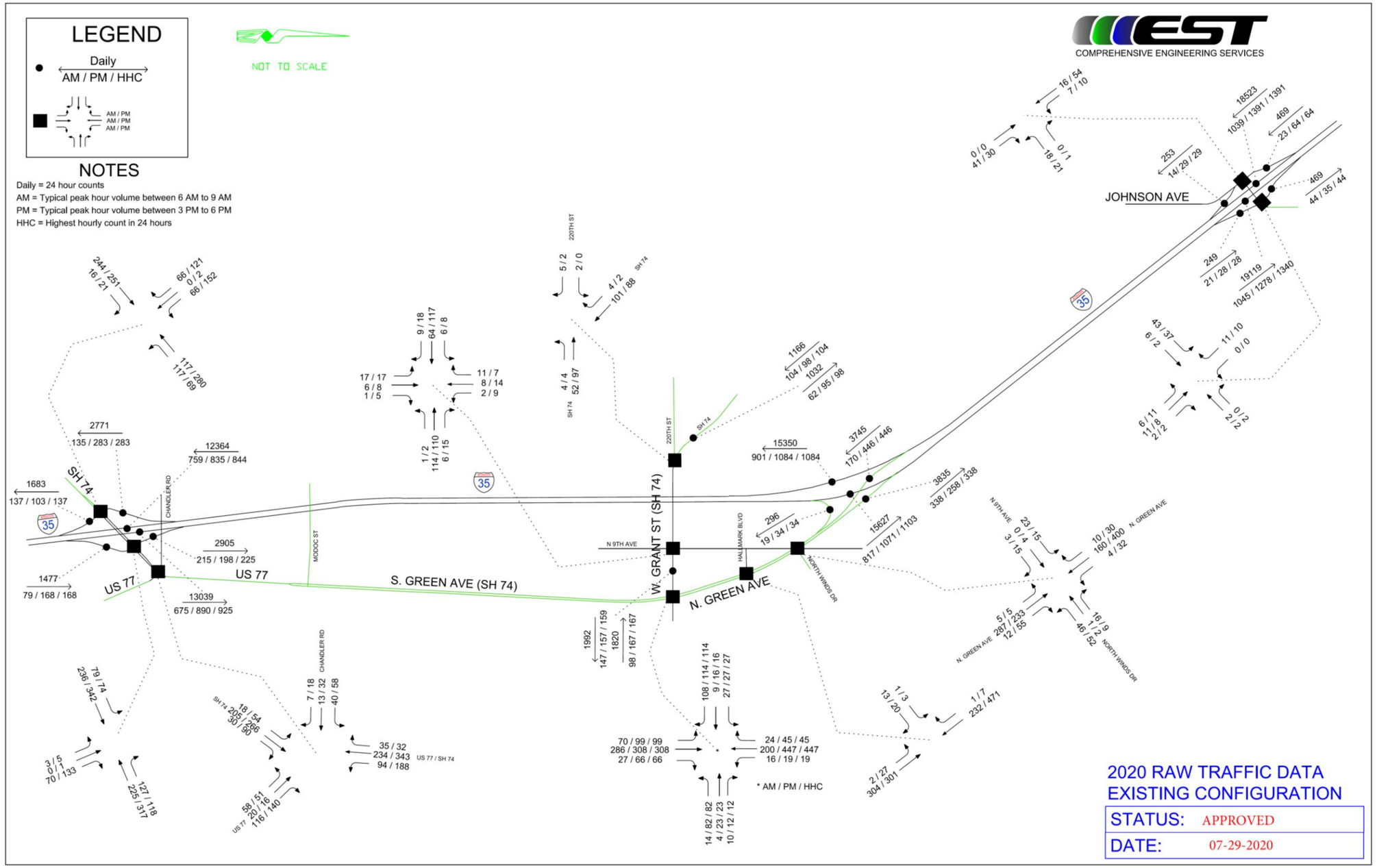


Figure 2. 2020 Raw Traffic Data – Existing Network

2.2 Design Traffic Development

2020 and 2045 design traffic data were developed using the 2020 raw data. To develop 2020 design traffic data a seasonal adjustment factor, an axle adjustment factor, and a COVID-19 adjustment factor, (provided by ODOT on 6/29/2020) were applied to raw data. Then, the 2020 design data was adjusted and balanced to meet the K and D factors provided by ODOT. Annual growth rates recommended by ODOT were applied to 2020 design traffic data to project the future design traffic volumes for the 2045.

2020 and 2045 design traffic data for the existing network are shown on **Figure 3** and **Figure 4**, respectively.

***Note**: there are no known "committed" projects in 2045 in the study area.*

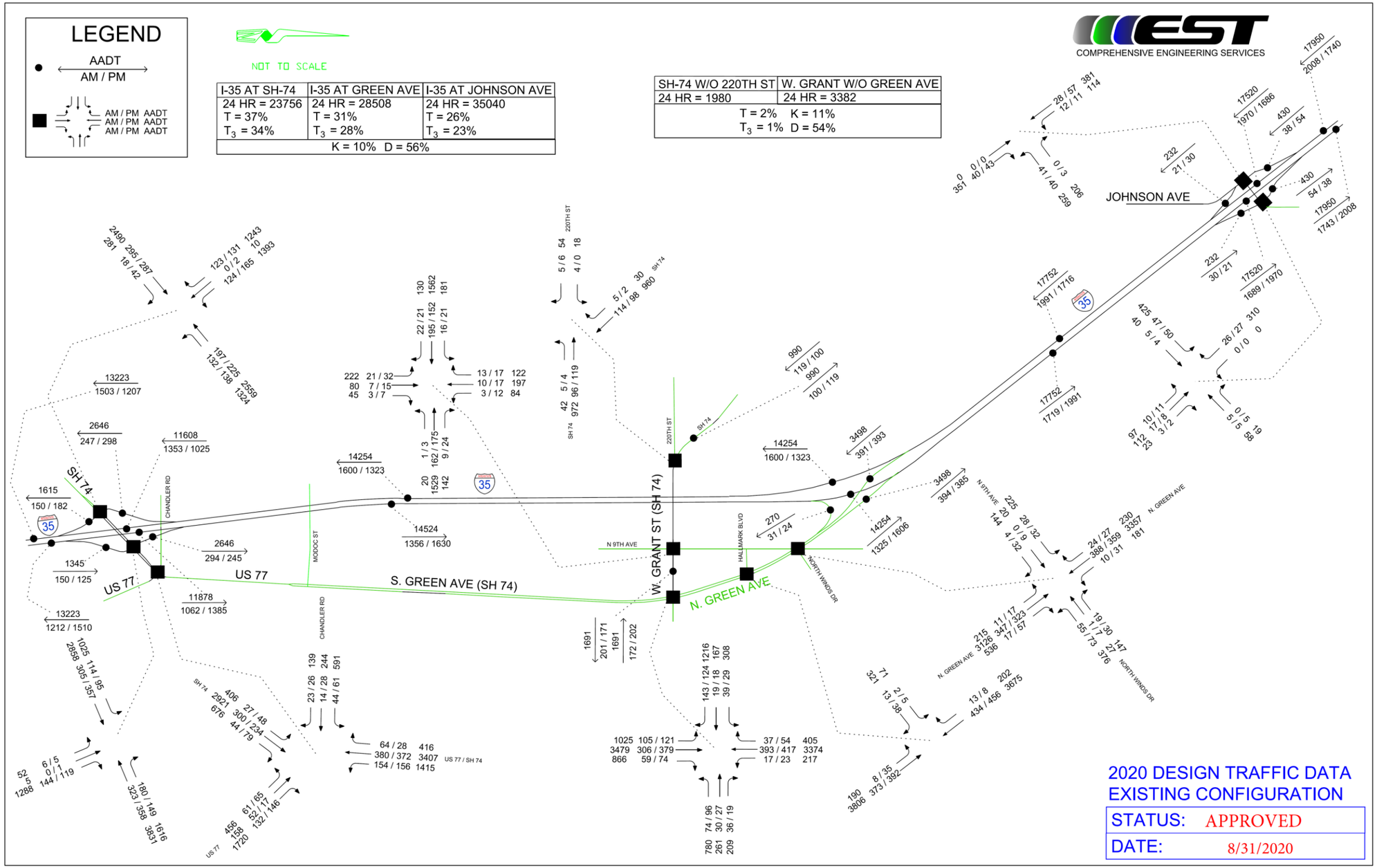


Figure 3. 2020 Design Traffic Data – Existing Network

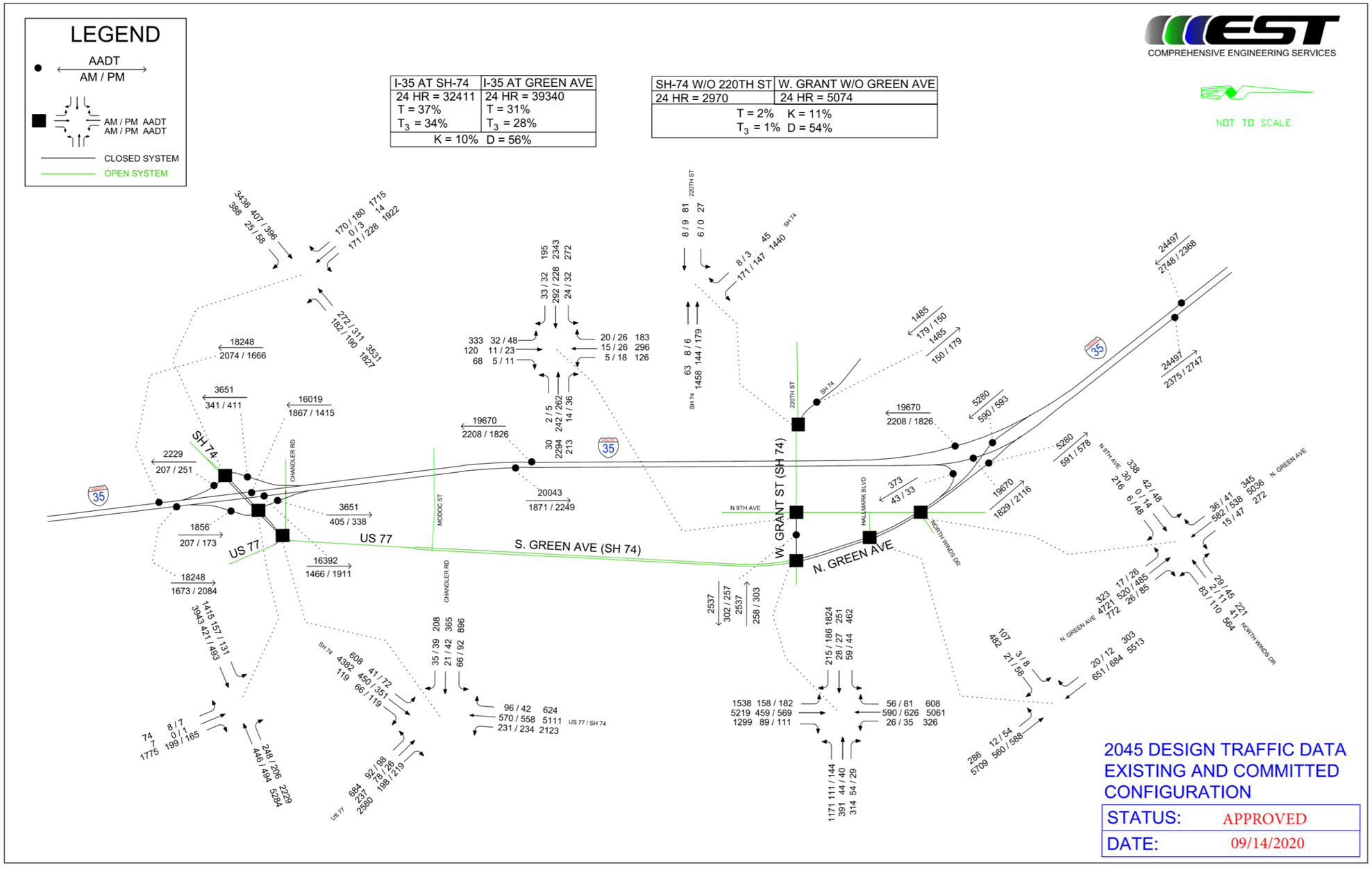


Figure 4. 2045 Design Traffic Data – Existing + Committed Network

3 EXISTING NETWORK TRAFFIC ANALYSIS

3.1 Operational Analysis

This section provides the summary of the operational analysis for the 2020 design traffic on the existing network.

3.1.1 Intersection Level of Service (LOS) Analysis

Synchro/SimTraffic 10 software (Synchro), which is based on the Highway Capacity Manual (HCM), 6th Edition (Transportation Research Board [TRB], 2016), was used for intersection LOS analysis within the study area. Three signalized and five Two-Way Stop Controlled (TWSC) intersections were included in the analysis. Synchro analysis reports are presented in **Appendix B.**

Signalized Intersections – LOS Analysis

LOS for signalized intersections is determined by the amount of control delay that a vehicle experience waiting for a green indication. The delay includes the time when a vehicle joins a queue or is the first to start a queue, plus the time for the vehicle to complete the movement. Signalized intersection LOS criteria, defined by HCM; 6th edition, is shown in **Table 1**.

Table 1. LOS Criteria for Signalized Intersections -Motorized Vehicle Mode

	LOS by Volume-to-Capacity Ratio	
Control Delay(s/veh)	**≤ 1.0**	**>1.0**
≤ 10	A	F
>10-20	B	F
>20-35	C	F
>35-55	D	F
>55-80	E	F
>80	F	F

Source: HCM 6th edition – Exhibit 19-8

The following assumptions were made for signalized intersection analysis in Synchro:

- Traffic signals are “actuated – uncoordinated”.

- Cycle length and phasing were optimized at each interaction.
- The minimum cycle length was set at 60 seconds.

Unsignalized, TWSC Intersections - LOS Analysis

The LOS for unsignalized intersections is similar to the signalized intersections. In both, the delay is determined by the amount of wait time a vehicle experiences before being able to complete a maneuver. Since there are no stop signs on the major approaches, there is no delay on the through movement and delay is negligible for turning movements. Vehicles on the stop-controlled, minor/crossing approaches experience delay and the level of service is reported accordingly. The LOS criteria apply to each approach on the minor street. LOS is not calculated for major street approaches or for the intersection. LOS criteria defined by HCM; 6th edition is shown in **Table 2.**

Table 2. LOS Criteria for TWSC Intersections -Motorized Vehicle Mode

	LOS by Volume-to-Capacity Ratio	
Control Delay(s/veh)	**≤ 1.0**	**>1.0**
≤ 10	A	F
>10-15	B	F
>15-25	C	F
>25-35	D	F
>35-50	E	F
>50	F	F

(Source: HCM 6th edition – Exhibit 19-8)

The results of LOS and delay for signalized and critical approaches on TWSC intersections during the 2020 AM and PM peak hours are summarized in **Table 3.**

Table 3. Delay and LOS for Signalized Intersections and Critical Approaches at TWSC Intersections (2020 Design Traffic on the Existing Network)

Intersection Delay: Based on 2020 Design Traffic Data						
Signalized Intersections						
Location	**2020-Existing AM Peak**			**2020-Existing PM Peak**		
	Delay (sec/veh)	**LOS**	**Delay (veh-hr)**	**Delay (sec/veh)**	**LOS**	**Delay (veh-hr)**
North Winds Dr. & N. Green Ave.	10.4	B	2.5	11.5	B	2.9
W. Grant St. & N. Green Ave.	12.5	B	3.6	12.9	B	4.3
SH-77 & N. Green Ave.	14.1	B	4.2	13.9	B	4.0
Total Signalized Delay (veh-hr)	**10.3**			**11.2**		
TWSC Intersections						
Location	**2020-Existing AM Peak**			**2020-Existing PM Peak**		
	Delay* (sec/veh)	**LOS***	**Delay (veh-hr)+**	**Delay* (sec/veh)**	**LOS***	**Delay (veh-hr)+**
W. Grant St. & 9th Ave.	13.7	B	0.2	13.9	B	0.3
SH-74 & SB I-35 off ramp (Exit 91)	19.0	C	1.6	22.9	C	2.2
SH-74 & NB I-35 off ramp (Exit 91)	11.9	B	0.8	10.6	B	0.6
W. Grant St. & 220th St.	9.7	A	0.0	9.1	A	0
N. Green Ave. & Halmark Blvd.	10.5	B	0.1	11.3	B	0.2
Total TWSC Approach Delay (veh-hr)	**2.7**			**3.3**		
Total Intersection Delay (veh-hr)	**13.0**			**14.5**		

*Critical approach only +Entire Intersection, including uncontrolled movements

Intersection Analysis Summary

According to the Synchro analysis results summarized in **Table 3**, all signalized intersections and critical approaches at TWSC intersections currently operate at LOS C or better during both AM and PM peak hours.

3.1.2 Highway Facility Level of Service (LOS) Analysis

Highway Capacity Software (HCS7) (based on the Highway Capacity Manual (HCM), 6th edition) was used for the roadway segment analysis within the study area. LOS for freeway facilities is determined by density measured in passenger car equivalents (pc) per mile (mi) per lane (ln). HCS analysis reports are presented **Appendix C.**

LOS criteria for freeway facilities defined by the HCM is shown in **Table 4.**

Table 4. LOS Criteria for Urban and Rural Freeway Facilities

	Freeway Facility Density (pc/mi/ln)	
LOS	**Urban**	**Rural**
A	≤11	≤6
B	>11–18	>6–14
C	>18–26	>14–22
D	>26–35	>22–29
E	>35–45	>29–39
F	>45 or any component segment v_d/c ratio > 1.00	>39 or any component segment v_d/c ratio >1.00

(Source: HCM 6th edition – Exhibit 10-6)

Table 5 shows the 2020 HCS analysis results for existing freeway facilities on I-35 from SH-74 to N. Green Ave. The analysis includes freeway facilities which have influence areas of merge and diverge roadway segments. The results of the LOS analysis for the highway segments are summarized in **Table 5** for both the AM and PM peak hours. According to the results, LOS B and C are reported for this facility.

Table 5. AM/PM Peak Hour Segment LOS for I-35 (2020 Design Traffic on the Existing Network)

Roadway Facility (Freeway)	Direction	AM		PM	
		Density pc/mi/ln	LOS	Density pc/mi/ln	LOS
I-35 from SH-74 to N. Green Ave	NB	13.8	B	16.0	C
	SB	16.9	C	12.8	B

4 ALTERNATIVE SELECTION CRITERIA

The project purpose and need forms the basis for alternative selection scoring criteria. This process is accomplished through the development of a matrix that presents quantitative measures of effectiveness (MOE).

Quantitative Measures

The following transportation network performance measures were evaluated for the 2045 design hour traffic condition for each alternative.

- **Mobility**: the basis for the mobility assessment is an operational evaluation of the transportation network using LOS/Delay on the street network and LOS/Density along the I-35 facility.
- **Incident management:** the basis for the incident management MOE is the response time of the emergency responders accessing an incident on I-35 to and from the City Hospital, when the incident occurs north or south of W. Grant Street in either northbound or southbound directions.
- **Benefit:** the basis of this analysis is cost savings in lowering the response times to incidents on I-35. It will be presented as a Benefit-to-Cost ratio where the benefit includes time savings cost in the reduced delay of vehicles on I-35 plus the estimated reduction in the cost of secondary crashes.

5 2045 EXISTING + COMMITTED NETWORK - BASIS OF THE MEASURES OF EFFECTIVENESS

Section 5 presents the quantitative measures from **Section 4** on the Existing + Committed Network for the 2045 Design Traffic condition.

5.1 Operations Analysis

This section provides the summary of the operational analysis results for 2045 Design Traffic on the Existing + Committed network.

5.1.1 Intersection Level of Service (LOS) Analysis

Results of the LOS analysis **(Appendix B)** for the signalized and critical approaches on TWSC intersections in 2045 Existing + Committed network are summarized in **Table 6.** These results were determined from Synchro 10 - HCM 6th edition.

As shown in **Table 6,** all signalized intersections and critical approaches at TWSC intersections (except for the southbound approach at the SH-74 and SB I-35 off ramp intersection) operate at LOS C or better during both AM and PM peak hours. Vehicles on the southbound approach at the ramp terminal of the southbound I-35 off ramp experience LOS F during both morning and afternoon peak hours with average delay per vehicle of 55.9 seconds and 115.8 seconds, respectively. The LOS F at this approach is caused by excessive delay in the southbound to eastbound left turn during peak hours. Southbound left lane V/C ratios are 0.94 during AM and 1.25 during PM.

Table 6. LOS and Delay for Signalized Intersections and Critical Approaches at TWSC Intersections (2045 Design Traffic on the Existing + Committed Network)

Intersection Delay: Based on 2045 Design Traffic Data						
Signalized Intersections						
Location	**AM Peak**			**PM Peak**		
	Delay (sec/veh)	**LOS**	**Delay (veh-hr)**	**Delay (sec/veh)**	**LOS**	**Delay (veh-hr)**
North Winds Dr. & N. Green Ave.	10.9	B	4.0	12.6	B	4.8
W. Grant St. & N. Green Ave.	17.4	B	7.8	16.8	B	8.5
SH-77 & N. Green Ave.	16.4	B	7.2	17.9	B	7.8
Total Signalized Delay (veh-hr)	**19.0**			**21.1**		
TWSC Intersections						
Location	**AM Peak**			**PM Peak**		
	Delay* (sec/veh)	**LOS***	**Delay (veh-hr)+**	**Delay* (sec/veh)**	**LOS***	**Delay (veh-hr)+**
W. Grant St. & 9th Ave.	17.3	C	0.3	20.1	C	0.7
SH-74 & SB I-35 off ramp (Exit 91)	55.9	F	5.8	115.8	F	13.8
SH-74 & NB I-35 off ramp (Exit 91)	13.1	B	1.2	12.3	B	1.0
W. Grant St. & 220th St.	10.0	B	0.0	9.1	A	0.0
N. Green Ave. & Halmark Blvd.	12.5	B	0.1	14.5	B	0.5
Total TWSC Delay (veh-hr)	**7.4**			**16.0**		
Total Intersection Delay (veh-hr)	**26.4**			**37.1**		

*Critical approach only +Entire Intersection, including uncontrolled movements

5.1.2 Highway Facility Level of Service (LOS) Analysis

The results of the LOS analysis **(Appendix C)** for the highway segments for the 2045 Design Traffic on the Existing + Committed network are summarized in the following table for both the AM and PM peak hours. **Table 7** shows the results of the HCM analysis for freeway facilities on I-35, between SH-74 and N. Green Ave, in 2045 on the Existing plus Committed network. The analysis shows that there is a decrease in the LOS from the 2020 (LOS B and C) to 2045 (LOS between C and D) along the facility.

Table 7. AM/PM Peak Hour Segment LOS for I-35 (2045 Design Traffic on the Existing + Committed Network)

Roadway Facility (Freeway)	Direction	AM		PM	
		Density pc/mi/ln	LOS	Density pc/mi/ln	LOS
I-35 from SH-74 to N. Green Ave.	NB	18.9	C	22.5	D
	SB	23.4	D	17.0	C

5.1.3 Summary of Operational Analysis of 2020 and 2045 Existing Network

Summary of the intersection and segment LOS analysis for 2020 (presented in **Section 3**) and 2045 Design Traffic on the Existing + Committed network are summarized in **Figure 5.**

5.2 Mobility

The Synchro and HCS traffic operational analysis results for the 2045 Design Traffic on the Existing + Committed network provided in **Table 6** and **Table 7** shows the LOS for the intersections and I-35 facility along the study corridor. The Synchro analysis **(Table 6)** shows that the TWSC intersection at SH-74 & SB I-35 off ramp (Exit 91) operates at the LOS F (with a delay of 115.8 sec/veh) for the southbound approach. The rest of the intersections operate at the LOS C or better during the AM and PM peak hours. The HCS analysis results **(Table 7)** show the LOS for I-35 to be between C and D during the AM and PM peak hours (in the northbound and the southbound directions).

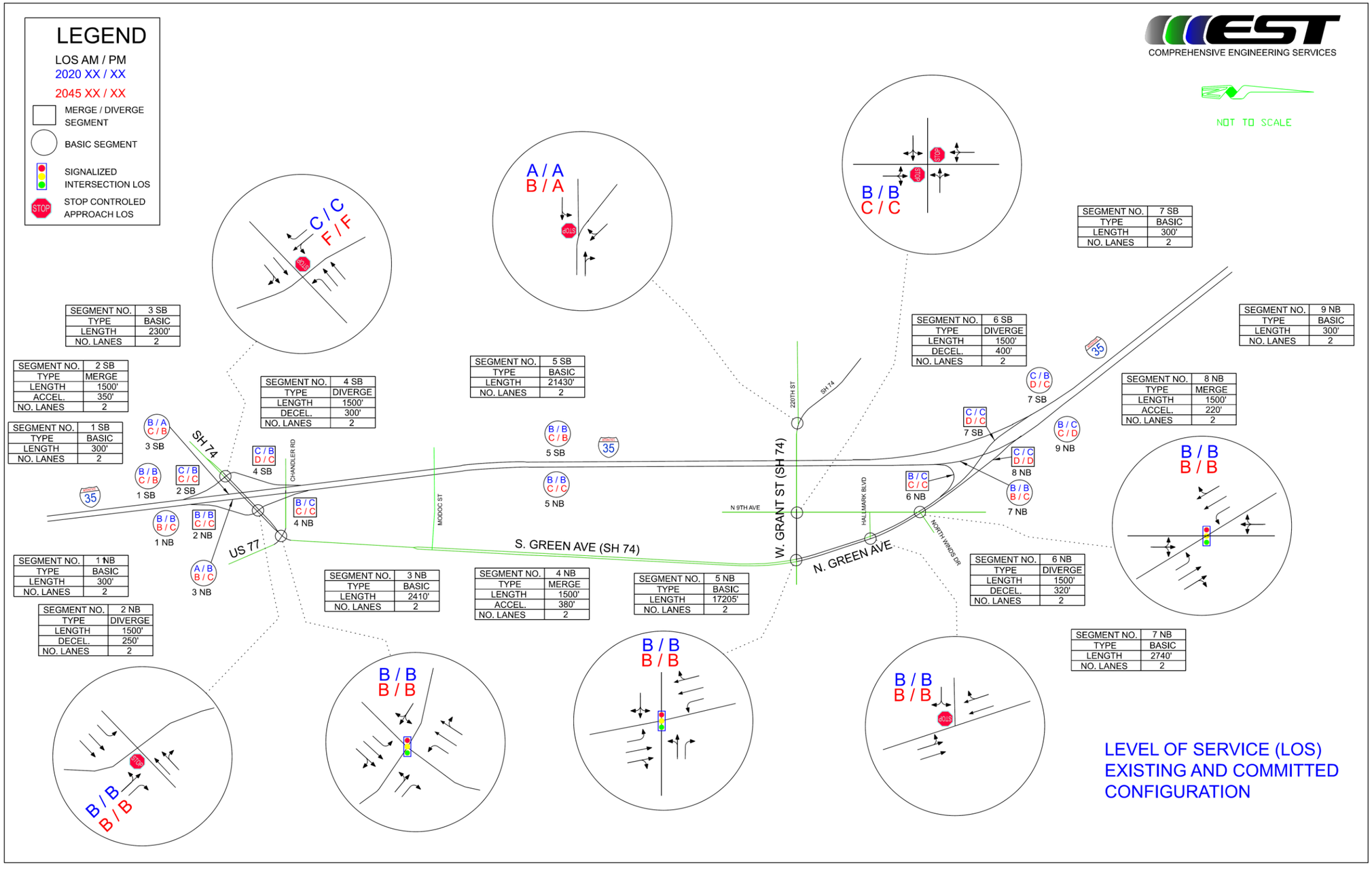


Figure 5. Summary of LOS Analysis for 2020 and 2045 Existing Network

5.3 Incident Management

In order to compare response times to incidents within the I-35 corridor, it is necessary to establish a basis for the response time analysis. This study selected five hypothetical incident locations along I-35 within the study area. **Figure 6** shows the hypothetical incident locations in both NB and SB directions. **Figure 6** also shows the location of the emergency response agencies (Police/Fire Department, EMS, City Hospital) in the City of Purcell. **Table 8** provides the summary of analysis results by distance (miles) and time traveled (seconds) for emergency responders to access the incident locations on the existing network. Towing and recovery companies are not shown on the map. The time between the occurrence of an incident and the time of initiating the response is not considered. The time saving formed in this measure is used as the basis for the Cost of Delay criteria presented in **Section 6**.

The main emergency responders are:

- **Police Department/Law Enforcement:** Applicable law enforcement agencies have jurisdiction over roadway incidents.
- **Fire Department:** Fire and rescue services provided by fire departments and HazMat agencies.
- **Emergency Medical Services (EMS) Branch/Hospital:** Treatment and transport of victims.
- **Transportation Agency:** The applicable transportation agency responsible for establishing traffic control.
- **Towing and Recovery:** Towing and recovery services responsible for the safe and efficient removal of wrecked or disabled vehicles, and debris from the incident scene.

***Note**: **Transportation Agency** and **Towing and Recovery** entities are not considered in this analysis. It is assumed that free flow traffic condition exists.*

Figure 6. Existing Network Including Hypothetical Incident Locations and the City Emergency Responder Agencies

Table 8. Existing Network – Mile/Time Travel Analysis to/from the Hypothetical Incident Locations

Hypothetical Incident Location	Dir	Existing Network									
		(from) Fire/Police Department			(from) Wadley EMS			(To) Hospital			Total Time (Min)
		Distance (Mile)		Travel Time (Min)	Distance (Mile)		Travel Time (Min)	Distance (Mile)		Total Response Time (Min)	
		City Road	I-35		City Road	I-35		City Road	I-35		
1) I-35 N/O N. Green Ave	NB	1.5	0.6	**3.1**	2.7	0.6	**5.1**	1	5.6	**6.4**	**14.6**
	SB	1.5	5	**6.9**	2.7	5	**8.9**	1	1.2	**2.7**	**18.5**
2) I-35 N/O W. Grant St	NB	1.5	4.9	**6.8**	2.2	3.4	**6.6**	1	0.9	**2.4**	**15.8**
	SB	1.5	1.8	**4.1**	2.7	1.8	**6.2**	1	4	**5.1**	**15.4**
3) I-35 S/O W. Grant St	NB	1.5	4.4	**6.4**	2.2	2.9	**6.2**	1	1.4	**2.9**	**15.5**
	SB	1.5	2.3	**4.6**	2.7	2.3	**6.6**	1	3.5	**4.7**	**15.9**
4) I-35 N/O SH-74	NB	3.4	0.8	**6.5**	2.2	0.8	**4.5**	1	3.5	**4.6**	**15.6**
	SB	1.5	4.6	**6.5**	2.2	2.8	**6.2**	1	5.3	**6.1**	**18.8**

6 CRITERIA DEVELOPMENT AND ALTERNATIVES ANALYSIS

A feasibility study was conducted by the City of Purcell in early 2019 (Transportation Feasibility Study Report, April 2019) that looked at responding to the Purpose and Need challenges by providing additional access to I-35 within Purcell. The study showed the most practical location of seeking better access to I-35 would be at the W. Grant Street (SH-74) crossing. Three initial alternatives that were presented in that feasibility study are further evaluated in this report. Two sub alternatives for Alternatives 2 and 3 were also evaluated which are with and without the existing northbound off-ramp to N. Green Avenue interchange (Exit 95). Alternatives 1 and 2 provide partial access to I-35 and Alternative 3 provides full access to I-35 at W. Grant Street (SH 74). The identified alternatives for analysis are listed below:

- Alternative 1: I 35 SB on-ramp from W. Grant Street
- Alternative 2: I 35 NB off-ramp to W. Grant Street and I 35 SB on-ramp from W. Grant Street keeping the I-35 NB off-ramp to N. Green Avenue (referred to as Alternative 2.1 in the analysis)
    a. Alternative 2 (optional ramp removal): I 35 NB off-ramp to W. Grant Street and I 35 SB on-ramp from W. Grant Street removing the I 35 NB off-ramp to N. Green Avenue (referred to as Alternative 2.2 in the analysis).
- Alternative 3: Full interchange at W. Grant Street keeping the I 35 NB off-ramp to N. Green Avenue (referred to as Alternative 3.1 in the analysis).
    a. Alternative 3 (optional ramp removal): Full interchange at W. Grant Street removing the I-35 NB off-ramp to N. Green Avenue (referred to as Alternative 3.2 in the analysis).

6.1 Trip Reassignment Methodology and Results

Due to different network and connectivity arrangements for each alternative, it is anticipated that travelers will adjust their trip routes, accordingly. This causes changes in travel demand on each alternative network. To account for these anticipated changes in travel demand, trips were "re-assigned" to appropriate and logical routes for each alternative. **Figure 7** through **Figure 11** show estimated traffic volumes for the three primary alternatives, plus two sub-alternatives, for the 2045 design year scenario.

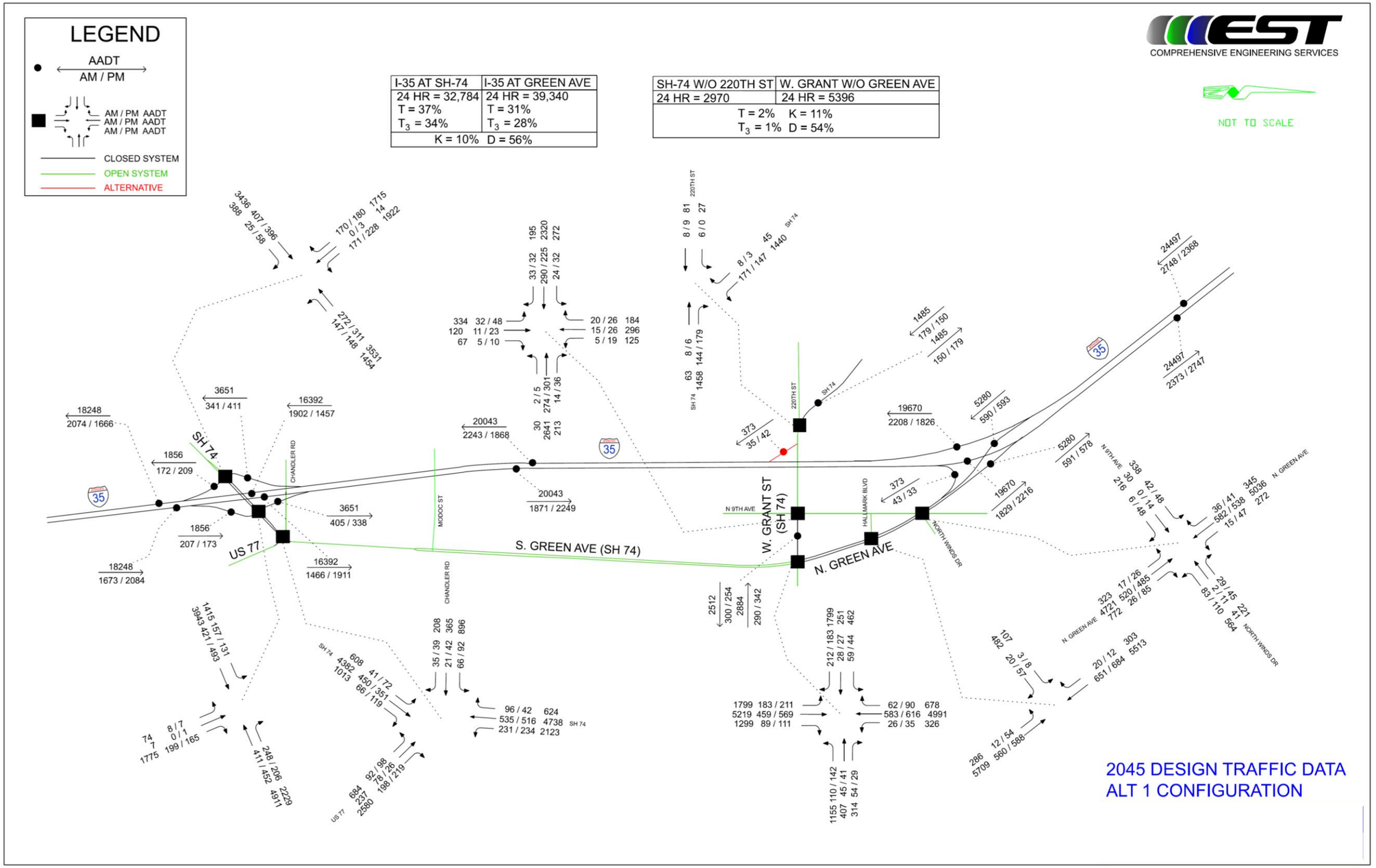


Figure 7. 2045 Alternative 1 Design Traffic Data

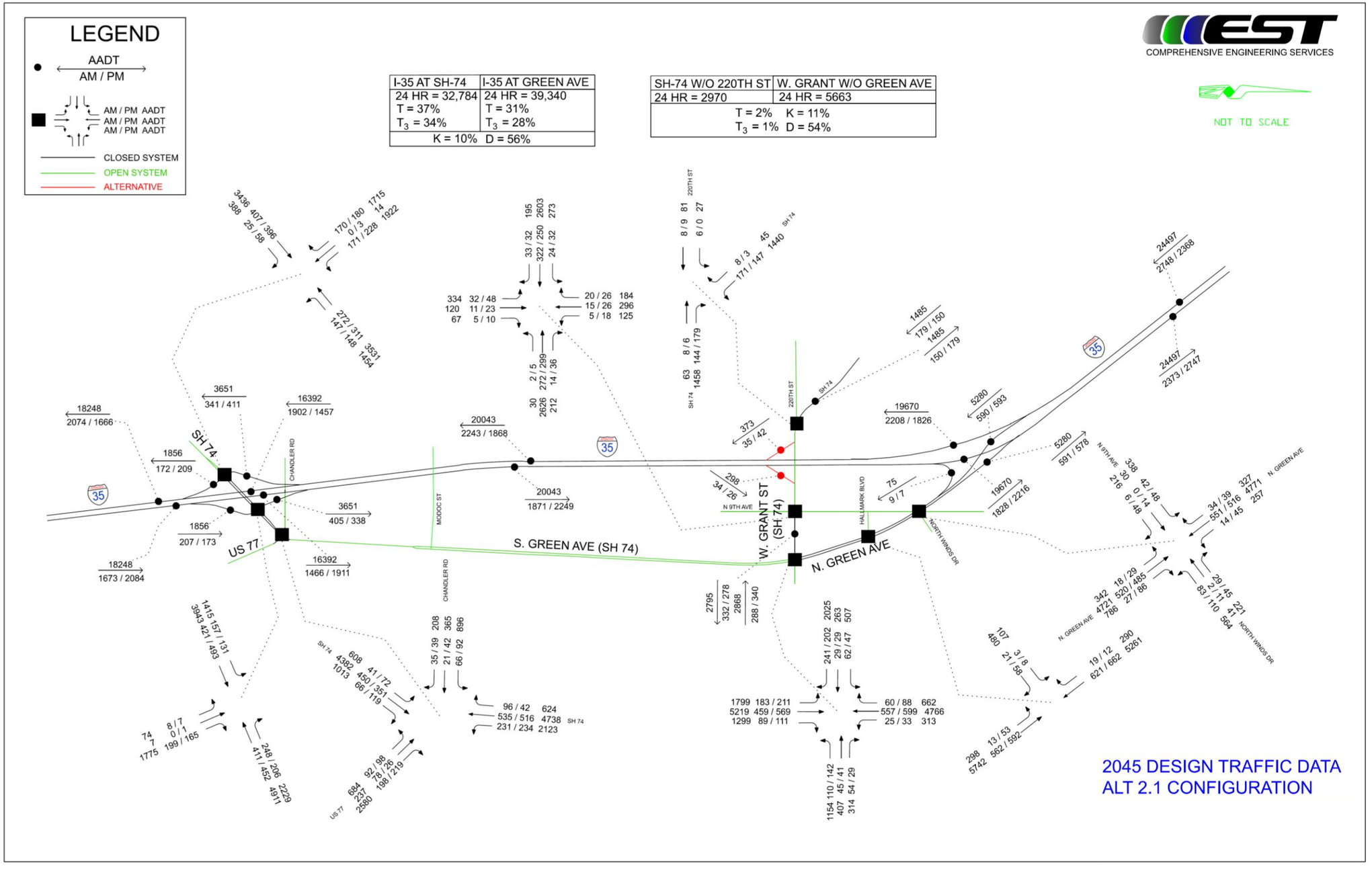


Figure 8. 2045 Alternative 2.1 Design Traffic Data

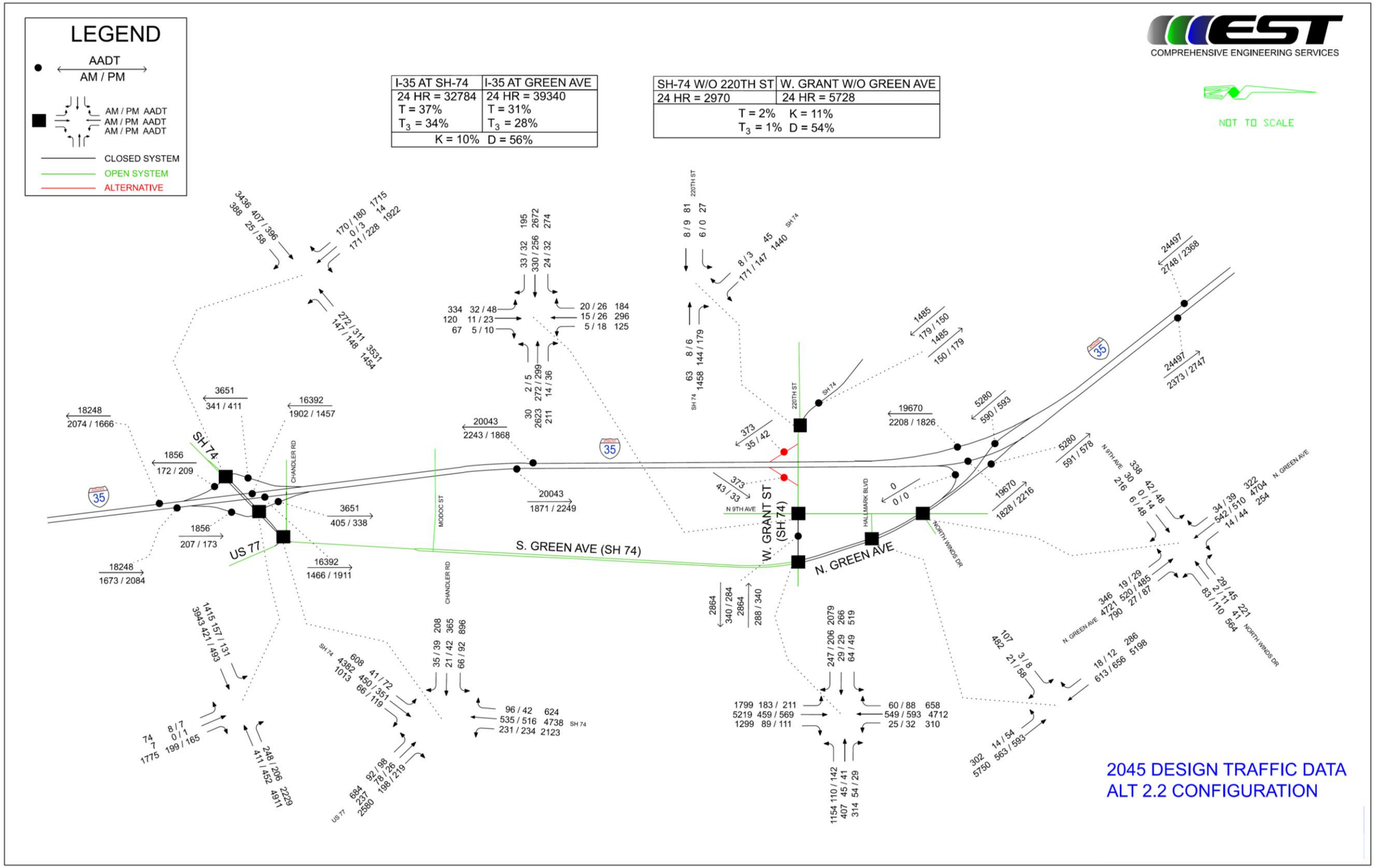


Figure 9. 2045 Alternative 2.2 Design Traffic Data

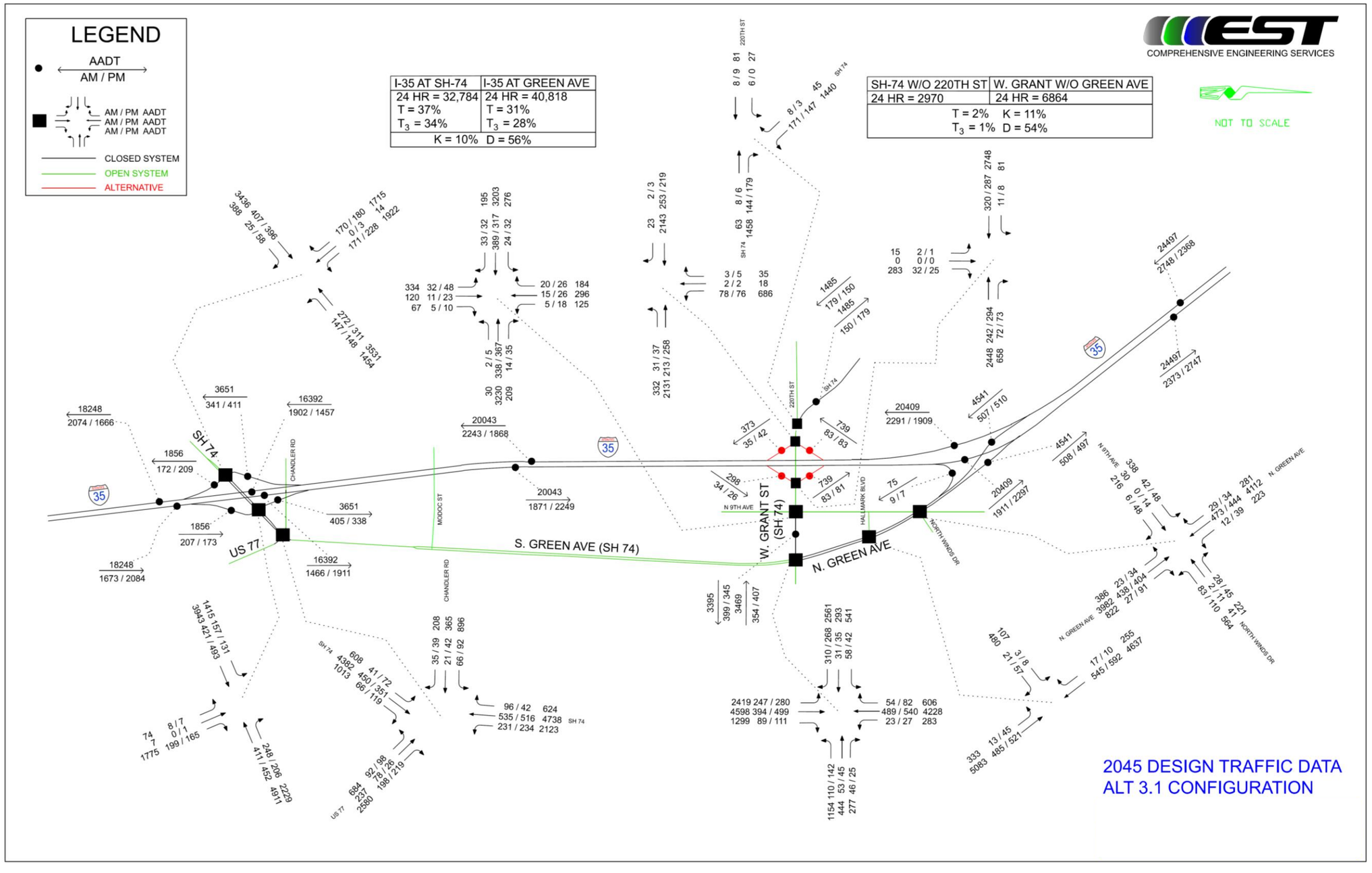


Figure 10. 2045 Alternative 3.1 Design Traffic Data

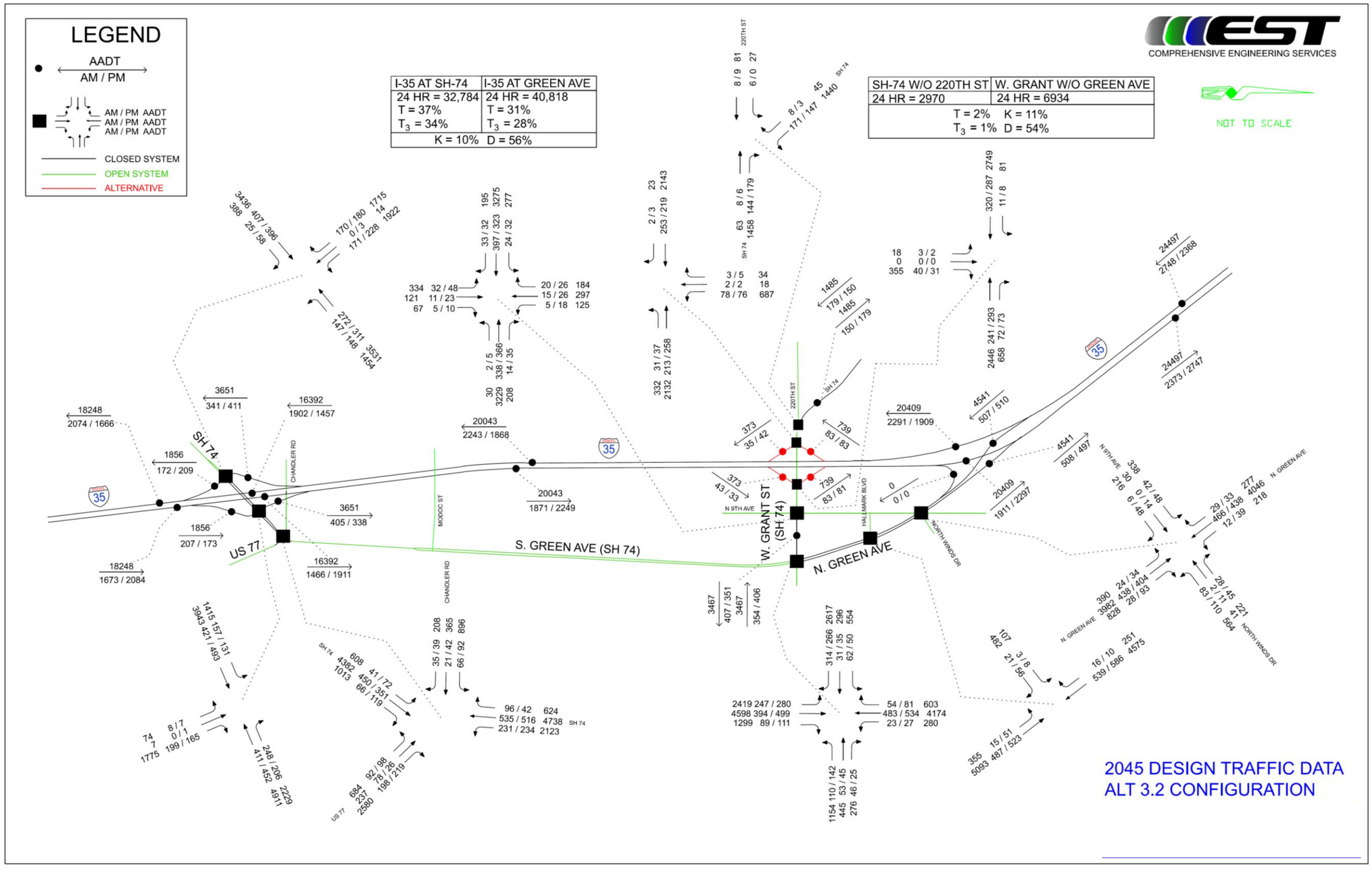


Figure 11. 2045 Alternative 3.2 Design Traffic Data

6.2 Operational Analysis

This section provides the intersection and segment operational analysis results using Synchro 10 and HCS7 (HCM 6th edition) for the three plus two (sub) alternatives.

6.2.1 Intersection Level of Service (LOS) Analysis

Results of the LOS analysis **(Appendix B)** for the signalized intersections and critical approaches at TWSC intersections in 2045 Existing + Committed network and all alternatives are summarized in **Table 9** and **Table 10.**

Table 9. LOS and Delay for Signalized Intersections and Critical Approaches at TWSC Intersections (2045 – AM Peak Hour)

Intersection Delay: 2045 AM Peak																		
Signalized Intersections																		
Location	**Existing + Committed**			**Alt 1**			**Alt 2.1**			**Alt 2.2**			**Alt 3.1**			**Alt 3.2**		
	Delay (sec/veh)	**LOS**	**Delay (veh-hr)**	**Delay (sec/veh)**	**LOS**	**Delay (veh-hr)**	**Delay (sec/veh)**	**LOS**	**Delay (veh-hr)**	**Delay (sec/veh)**	**LOS**	**Delay (veh-hr)**	**Delay (sec/veh)**	**LOS**	**Delay (veh-hr)**	**Delay (sec/veh)**	**LOS**	**Delay (veh-hr)**
North Winds Dr. & N. Green Ave.	10.9	B	4.0	11.0	B	3.7	10.9	B	3.9	11.1	B	3.9	10.9	B	3.4	10.9	B	3.4
W. Grant St. & N. Green Ave.	17.4	B	7.8	17.7	B	8.0	15.8	B	7.0	16.2	B	7.1	17.0	B	7.1	16.5	B	6.8
SH-77 & N. Green Ave.	16.4	B	7.2	16.0	B	6.9	16.0	B	6.90	16	B	6.9	16.0	B	6.9	16.0	B	6.9
Total Signalized Delay (veh-hr)	**19.0**			**18.6**			**17.8**			**17.9**			**17.4**			**17.1**		
TWSC Intersections																		
Location	**Existing + Committed**			**Alt 1**			**Alt 2.1**			**Alt 2.2**			**Alt 3.1**			**Alt 3.2**		
	Delay* (sec/veh)	**LOS***	**Delay (veh-hr)+**	**Delay* (sec/veh)**	**LOS***	**Delay (veh-hr)+**	**Delay* (sec/veh)**	**LOS***	**Delay (veh-hr)+**	**Delay* (sec/veh)**	**LOS***	**Delay (veh-hr)+**	**Delay* (sec/veh)**	**LOS***	**Delay (veh-hr)+**	**Delay* (sec/veh)**	**LOS***	**Delay (veh-hr)+**
W. Grant St. & 9th Ave.	17.3	C	0.3	18.1	C	0.4	18.9	C	0.4	19.2	C	0.4	23.6	C	0.4	23.9	C	0.4
SH-74 & SB I-35 off ramp	55.9	F	5.8	36.7	E	3.9	36.7	E	3.9	36.7	E	3.9	36.7	E	3.9	36.7	E	3.9
SH-74 & NB I-35 off ramp	13.1	B	1.2	13.0	B	1.2	13.0	B	1.2	13	B	1.2	13.1	B	1.2	13	B	1.2
W. Grant St. & 220th St.	10.0	B	0.0	10	B	0.0	10.0	B	0.0	10	B	0.0	10	B	0.0	10.0	B	0.0
N. Green Ave. & Halmark Blvd.	12.5	B	0.1	12.6	B	0.1	12.3	B	0.1	12.2	B	0.1	11.6	B	0.1	11.5	B	0.1
W. Grant St. & NB I-35 Off-Ramp	-			-			9.7	A	0.1	9.7	A	0.1	10.2	B	0.1	10.2	B	0.2
W. Grant St. & SB I-35 Off-Ramp	-			-			-			-			5.2	A	0.2	5.2	A	0.2
Total TWSC Delay (veh-hr)	**7.4**			**5.6**			**5.7**			**5.7**			**5.9**			**6.0**		
Total Intersection Delay (veh-hr)	**26.4**			**24.2**			**23.5**			**23.6**			**23.3**			**23.1**		

*Critical approach only +Entire Intersection, including uncontrolled movements

Table 10. LOS and Delay for Signalized Intersections and Critical Approaches at TWSC Intersections (2045 – PM Peak Hour)

Intersection Delay: 2045 PM Peak																		
Signalized Intersections																		
Location	**Existing + Committed**			**Alt 1**			**Alt 2.1**			**Alt 2.2**			**Alt 3.1**			**Alt 3.2**		
	Delay (sec/veh)	**LOS**	**Delay (veh-hr)**	**Delay (sec/veh)**	**LOS**	**Delay (veh-hr)**	**Delay (sec/veh)**	**LOS**	**Delay (veh-hr)**	**Delay (sec/veh)**	**LOS**	**Delay (veh-hr)**	**Delay (sec/veh)**	**LOS**	**Delay (veh-hr)**	**Delay (sec/veh)**	**LOS**	**Delay (veh-hr)**
North Winds Dr. & N. Green Ave.	12.6	B	4.8	12.6	B	4.8	12.6	B	4.7	12.6	B	4.7	12.4	B	4.1	12.4	B	4.1
W. Grant St. & N. Green Ave.	16.8	B	8.5	18.0	B	9.2	17.9	B	9.0	17.9	B	9.0	19.0	B	9.2	19.3	B	9.3
SH-77 & N. Green Ave.	17.9	B	7.8	18.0	B	7.7	18.0	B	7.7	18.0	B	7.7	18.0	B	7.7	18.0	B	7.7
Total Signalized Delay (veh-hr)	**21.1**			**21.7**			**21.4**			**21.4**			**21.0**			**21.1**		
TWSC Intersections																		
Location	**Existing + Committed**			**Alt 1**			**Alt 2.1**			**Alt 2.2**			**Alt 3.1**			**Alt 3.2**		
	Delay* (sec/veh)	**LOS***	**Delay (veh-hr)+**	**Delay* (sec/veh)**	**LOS***	**Delay (veh-hr)+**	**Delay* (sec/veh)**	**LOS***	**Delay (veh-hr)+**	**Delay* (sec/veh)**	**LOS***	**Delay (veh-hr)+**	**Delay* (sec/veh)**	**LOS***	**Delay (veh-hr)+**	**Delay* (sec/veh)**	**LOS***	**Delay (veh-hr)+**
W. Grant St. & 9th Ave.	20.1	C	0.7	20.3	C	0.7	20.7	C	0.7	21.5	C	0.7	28.1	D	0.9	28.4	D	0.9
SH-74 & SB I-35 off ramp	115.8	F	13.7	67.4	F	8.1	67.4	F	8.1	67.4	F	8.1	67.4	F	8.1	67.4	F	8.1
SH-74 & NB I-35 off ramp	12.3	B	1.0	12.3	B	1.0	12.3	B	1.0	12.3	B	.0	12.3	B	1	12.3	B	1
W. Grant St. & 220th St.	9.1	A	0.0	9.1	A	0.0	9.1	A	0.0	9.1	A	0.0	9.1	A	0.0	9.1	A	0.0
N. Green Ave. & Halmark Blvd.	14.5	B	0.5	14.5	B	0.5	14.2	B	0.5	14.2	B	0.5	13	B	0.4	13.1	B	0.4
W. Grant St. & NB I-35 Off-Ramp	-			-			9.5	A	0.1	9.4	A	0.1	10	B	0.1	9.9	A	0.1
W. Grant St. & SB I-35 Off-Ramp	-			-			-			-			5.3	A	0.2	5.3	A	0.2
Total TWSC Delay (veh-hr)	**15.9**			**10.3**			**10.4**			**10.4**			**10.7**			**10.7**		
Total Intersection Delay (veh-hr)	**37.0**			**32.0**			**31.8**			**31.8**			**31.7**			**31.8**		

*Critical approach only +Entire Intersection, including uncontrolled movements

6.2.2 Highway Facility Level of Service (LOS) Analysis

Table 11 shows the results of the HCM analysis **(Appendix C)** on freeway facilities along I-35, from SH-74 to N. Green Avenue in 2045 Existing plus Committed and alternative networks.

Table 11. 2045 AM/PM Peak Hour Segment LOS for I-35

2045	Direction	AM		PM	
		Density pc/mi/ln	LOS	Density pc/mi/ln	LOS
Existing + Committed	NB	18.9	C	22.5	D
	SB	23.4	D	17.0	C
Alternative 1	NB	18.9	C	22.5	D
	SB	23.3	D	17.2	C
Alternative 2.1	NB	18.8	C	22.6	D
	SB	23.3	D	17.2	C
Alternative 2.2	NB	18.6	C	22.4	D
	SB	23.3	D	17.2	C
Alternative 3.1	NB	19.2	C	23.0	D
	SB	23.6	D	17.5	C
Alternative 3.2	NB	18.8	C	22.7	D
	SB	23.6	D	17.5	C

The 2045 segment LOS analysis **(Appendix C)** results for 2045 Design Traffic on the Existing + Committed network plus the 2045 segment LOS analysis for the alternative configurations on northbound and southbound directions are summarized in **Table 12** and **Table 13**. In addition, the segment analysis results for all alternatives are shown in **Figure 12** through **Figure 16.**

6.3 Mobility

The Synchro and HCS traffic operational analysis results for the proposed alternatives (2045) are summarized in **Table 9, Table 10** and **Table 11** showing the LOS for the intersections and I-35 facility along the study corridor. According to the Synchro results in all alternatives, the LOS in critical approach (southbound) at the TWSC intersection at SH-74 and SB I-35 off-ramp, has improved to LOS E (from LOS F) during the AM peak hour. At this intersection, during the PM peak hour, the delay has extensively reduced from 115.8 sec/veh to 67.4 sec/veh. This is due to

the traffic reassignment where traffic has assigned to/from I-35 through the access point(s) at W. Grant Street (SH-74) interchange.

As expected, intersection delay at W. Grant Street and Green Avenue intersection increases for the alternatives compare to 2045 Existing + Committed network. This is due to traffic reassignment which directing more traffic to access I-35 through this intersection in determined alternatives. According to the HCS analysis the facility LOS for all alternatives stay the same as 2045 existing + Committed network (between C and D during the AM and PM peak hours in both northbound and the southbound directions).

Table 12. LOS for 2045 Design Traffic on the Freeway Facility Segments during the AM and PM Peak Hours- I-35 Northbound

Segment Number	Segment Name	Type	Existing + Committed		Alternative 1		Alternative 2.1		Alternative 2.2		Alternative 3.1		Alternative 3.2	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1	Study Limit - Start NB	Basic	B	C	B	C	B	C	B	C	B	C	B	C
2	SH 74 (South) Off	Diverge	C	C	C	C	C	C	C	C	C	C	C	C
3	SH 74 (South) Off to SH 74 (South) On	Basic	B	C	B	C	B	C	B	C	B	C	B	C
4	SH 74 (South) On	Merge	C	C	C	C	C	C	C	C	C	C	C	C
5	SH 74 (South) On to N Green Ave (SH 74) Off	Basic	C	C	C	C	NA		NA		NA		NA	
5	SH 74 (South) On to Grant St. Off	Basic	NA	NA	NA	NA	C	C	C	C	C	C	C	C
10	Grant St Off	Diverge					C	C	C	C	C	C	C	C
11	Grant St Off to N Green Ave (SH 74) Off	Basic					B	C	NA		NA		NA	
11	Grant St Off to N Green Ave (SH 74) On	Basic					NA	NA	B	C				
12	Grant St Off to Grant St On	Basic							NA	NA	B	C	B	C
13	Grant St On	Merge									C	C	C	C
11	Grant St On to N Green Ave (SH 74) Off	Basic									C	C	NA	
11	Grant St On to N Green Ave (SH 74) On	Basic									NA		C	C
6	N Green Ave (SH 74) Off	Diverge	C	C	C	C	C	C	NA		C	D	NA	
7	N Green Ave (SH 74) Off to N Green Ave (SH 74) On	Basic	B	C	B	C	B	C			C	C		
8	N Green Ave (SH 74) On	Merge	D	D	D	D	D	D	D	D	D	D	D	D
9	Study Limit - End NB	Basic	C	D	C	D	C	D	C	D	C	D	C	D

Table 13. LOS for 2045 Design Traffic on the Freeway Facility Segments during the AM and PM Peak Hours - I-35 Southbound

Segment Number	Segment	Type	Existing + Committed		Alternative 1		Alternative 2.1		Alternative 2.2		Alternative 3.1		Alternative 3.2	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
7	Study Limit - Start SB	Basic	D	C	D	C	D	C	D	C	D	C	D	C
6	N Green Ave (SH 74) Off	Diverge	D	C	D	C	D	C	D	C	D	C	D	C
5	N Green Ave (SH 74) Off to SH 74 (South) Off	Basic	C	B	NA		NA		NA		NA		NA	
9	N Green Ave (SH 74) Off to Grant St Off	Basic	NA								C	B	C	B
9	N Green Ave (SH 74) Off to Grant St On	Basic			C	B	C	B	C	B	NA		NA	
11	Grant St Off	Diverge			NA		NA		NA		D	C	D	C
10	Grant St Off to Grant St On	Basic									C	B	C	B
8	Grant St On	Merge			C	C	C	C	C	C	C	C	C	C
5	Grant St On to SH 74 (South) Off	Basic			C	B	C	B	C	B	C	B	C	B
4	SH 74 (South) Off	Diverge	D	C	D	C	D	C	D	C	D	C	D	C
3	SH 74 (South) Off to SH 74 (South) On	Basic	C	B	C	B	C	B	C	B	C	B	C	B
2	SH 74 (South) On	Merge	C	C	C	C	C	C	C	C	C	C	C	C
1	Study Limit - End SB	Basic	C	B	C	B	C	B	C	B	C	B	C	B

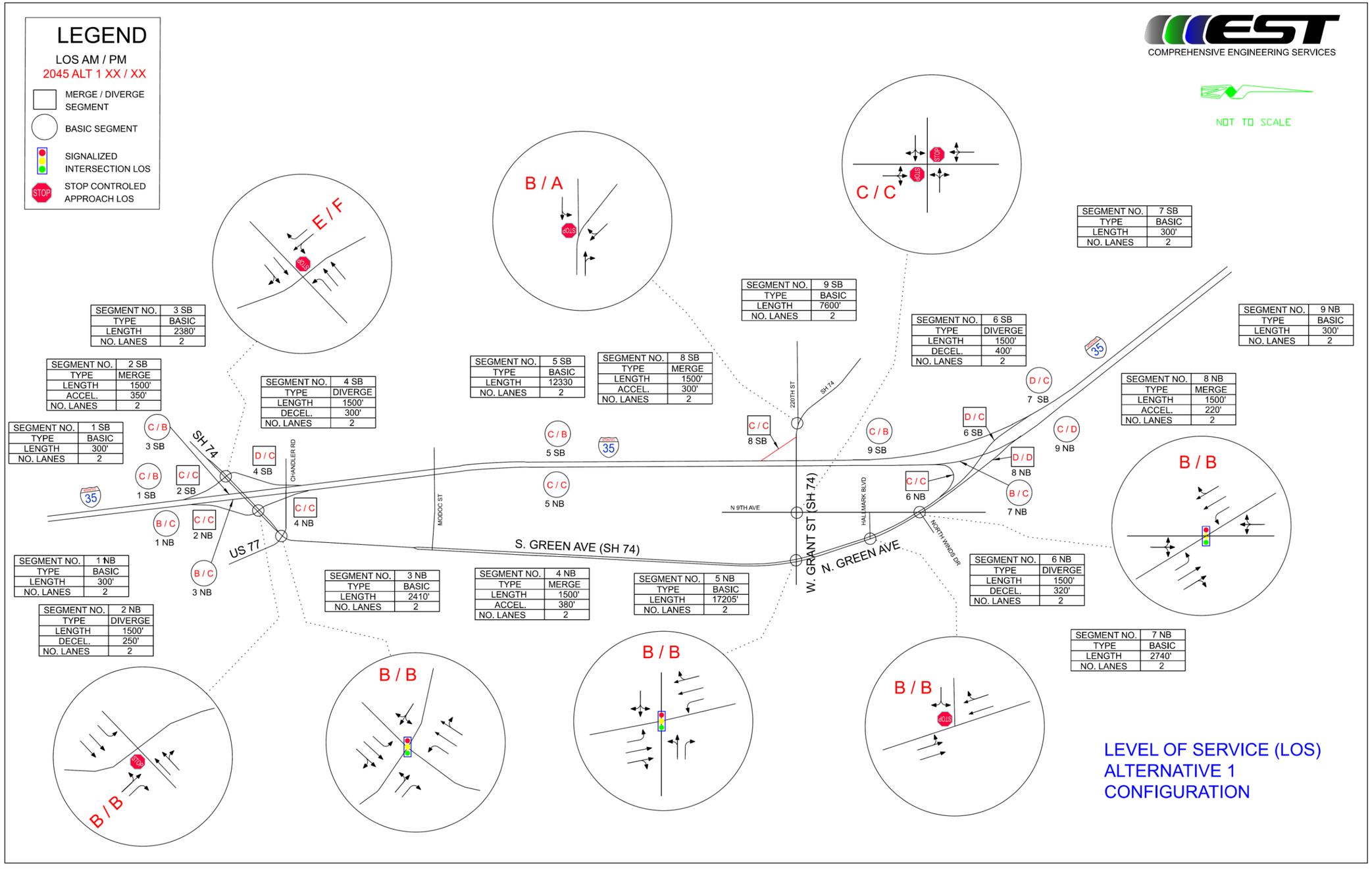


Figure 12. Alternative 1 – Summary of 2045 LOS

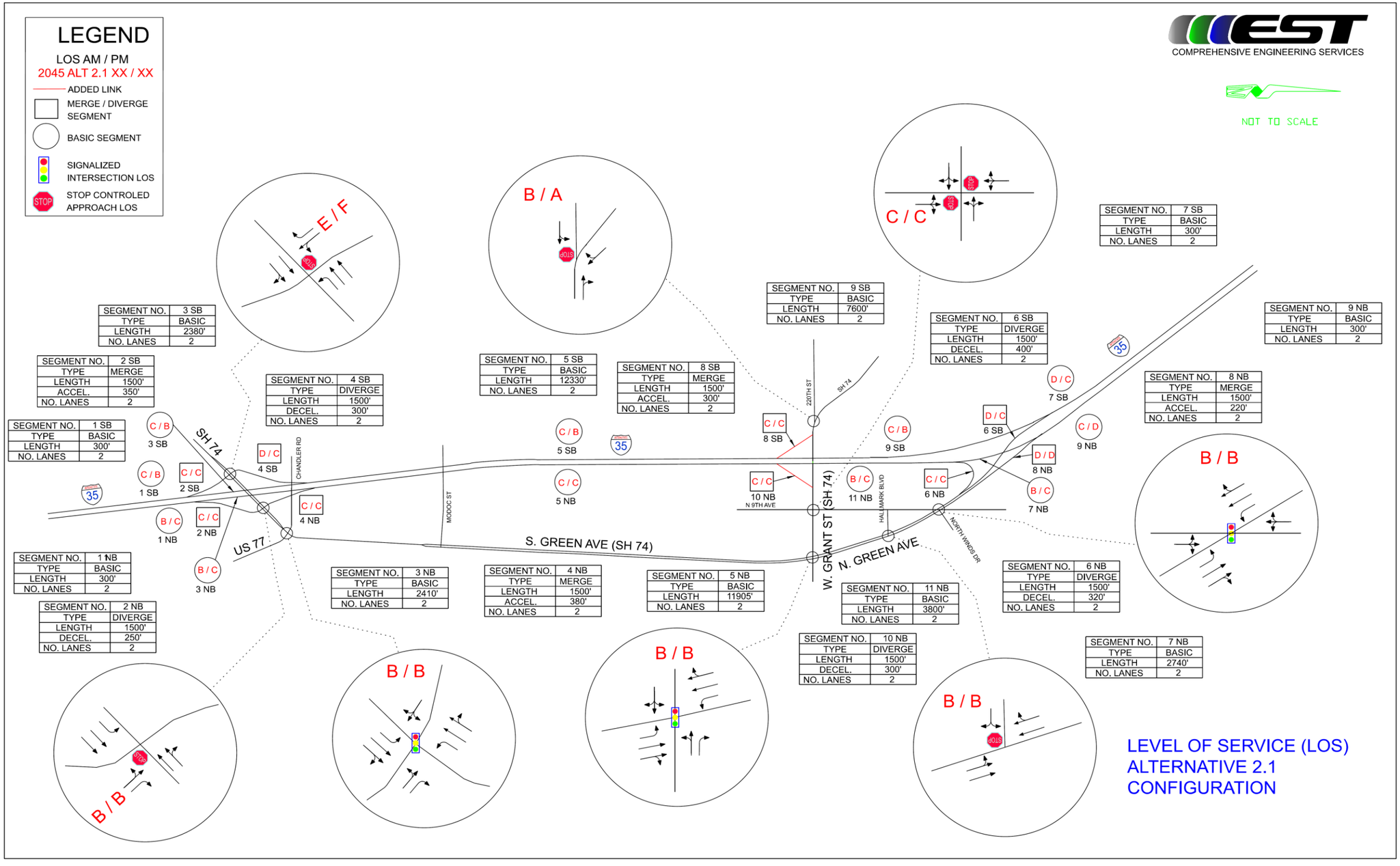


Figure 13. Alternative 2.1 – Summary of 2045 LOS

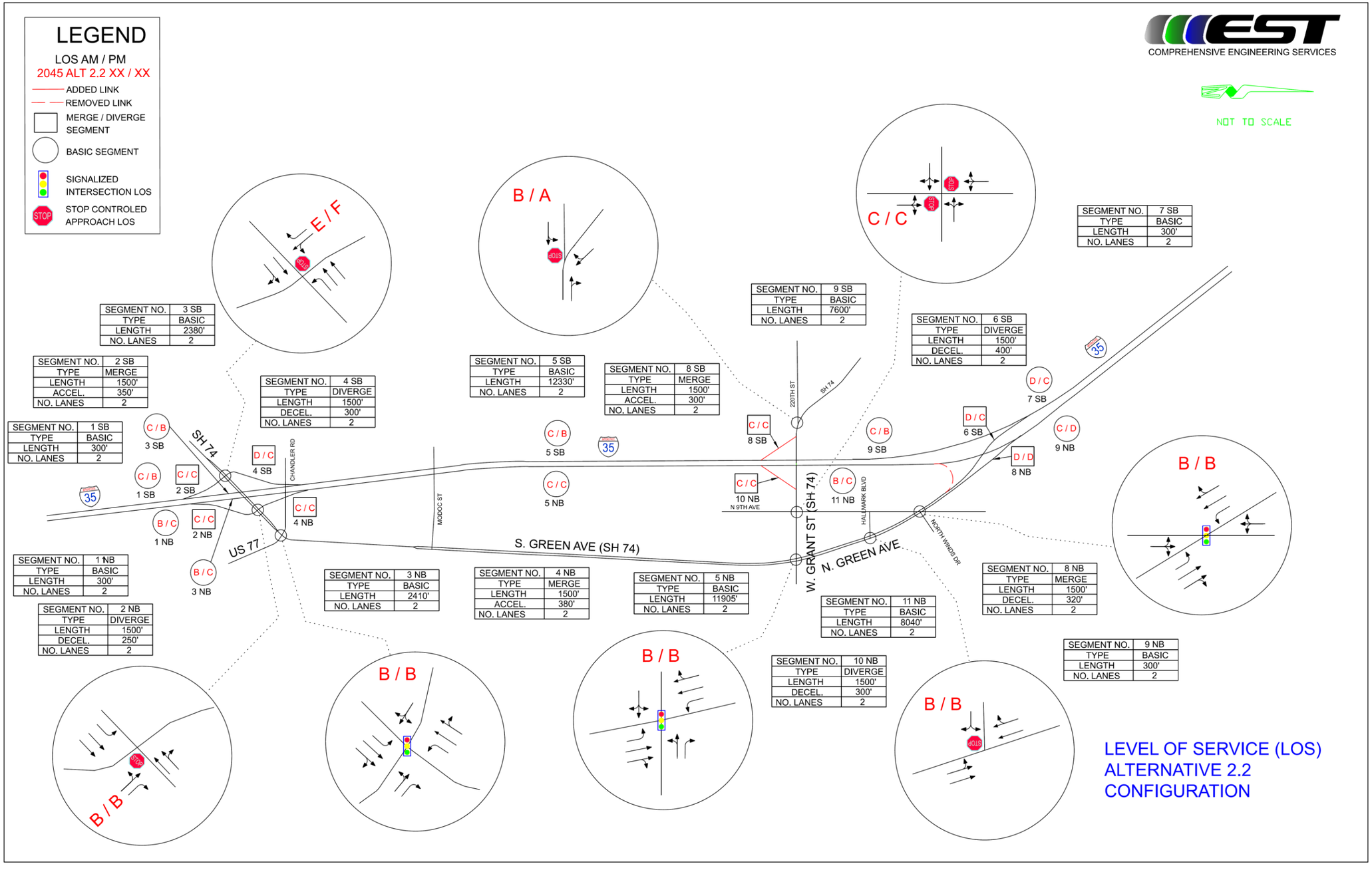
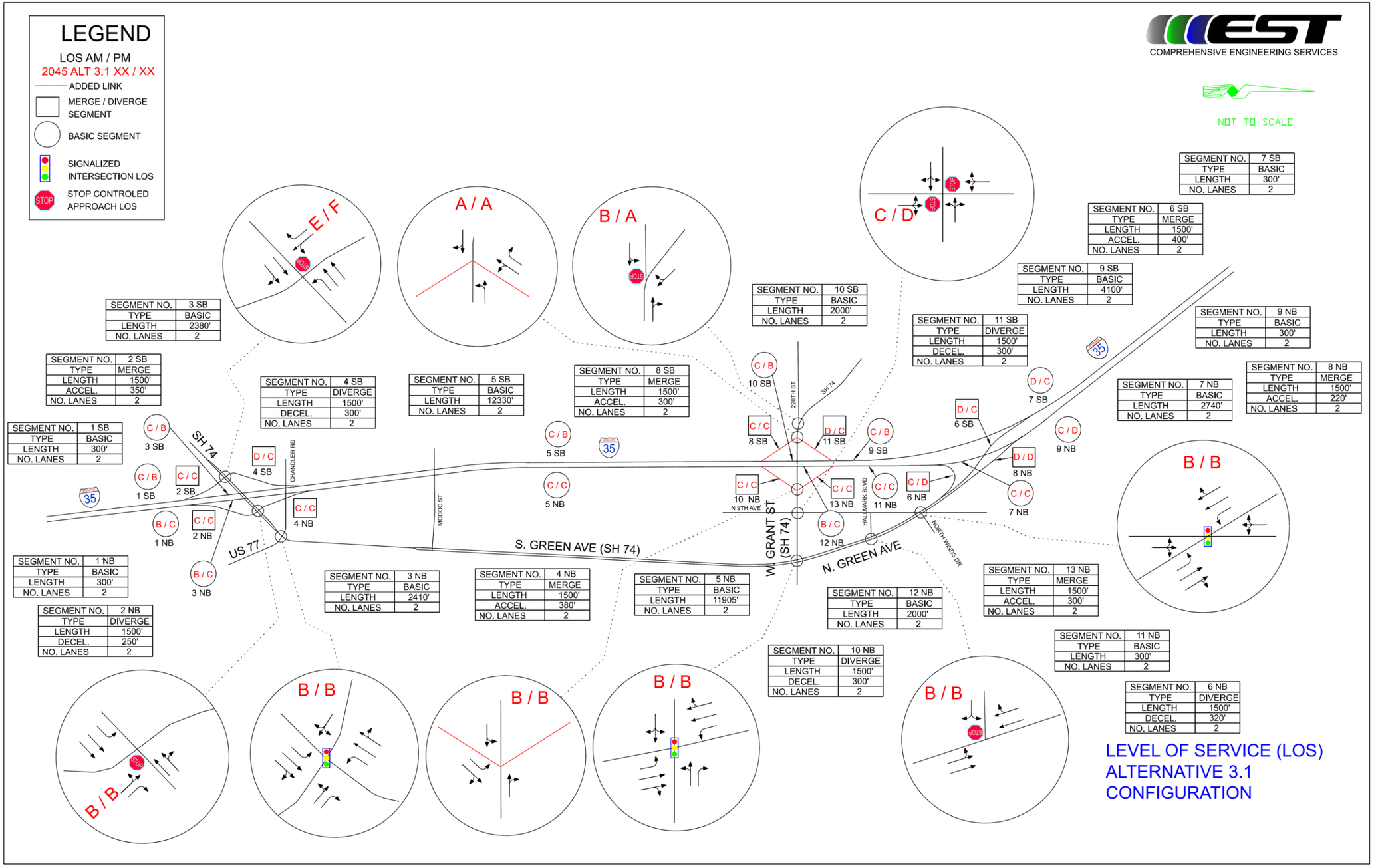


Figure 14. Alternative 2.2 – Summary of 2045 LOS



SEGMENT NO.	1 SB
TYPE	BASIC
LENGTH	300'
NO. LANES	2

SEGMENT NO.	2 SB
TYPE	MERGE
LENGTH	1500'
ACCEL.	350'
NO. LANES	2

SEGMENT NO.	3 SB
TYPE	BASIC
LENGTH	2380'
NO. LANES	2

SEGMENT NO.	4 SB
TYPE	DIVERGE
LENGTH	1500'
DECEL.	300'
NO. LANES	2

SEGMENT NO.	5 SB
TYPE	BASIC
LENGTH	12330'
NO. LANES	2

SEGMENT NO.	8 SB
TYPE	MERGE
LENGTH	1500'
ACCEL.	300'
NO. LANES	2

SEGMENT NO.	10 SB
TYPE	BASIC
LENGTH	2000'
NO. LANES	2

SEGMENT NO.	11 SB
TYPE	DIVERGE
LENGTH	1500'
DECEL.	300'
NO. LANES	2

SEGMENT NO.	9 SB
TYPE	BASIC
LENGTH	4100'
NO. LANES	2

SEGMENT NO.	6 SB
TYPE	MERGE
LENGTH	1500'
ACCEL.	400'
NO. LANES	2

SEGMENT NO.	7 SB
TYPE	BASIC
LENGTH	300'
NO. LANES	2

SEGMENT NO.	1 NB
TYPE	BASIC
LENGTH	300'
NO. LANES	2

SEGMENT NO.	2 NB
TYPE	DIVERGE
LENGTH	1500'
DECEL.	250'
NO. LANES	2

SEGMENT NO.	3 NB
TYPE	BASIC
LENGTH	2410'
NO. LANES	2

SEGMENT NO.	4 NB
TYPE	MERGE
LENGTH	1500'
ACCEL.	380'
NO. LANES	2

SEGMENT NO.	5 NB
TYPE	BASIC
LENGTH	11905'
NO. LANES	2

SEGMENT NO.	12 NB
TYPE	BASIC
LENGTH	2000'
NO. LANES	2

SEGMENT NO.	10 NB
TYPE	DIVERGE
LENGTH	1500'
DECEL.	300'
NO. LANES	2

SEGMENT NO.	13 NB
TYPE	MERGE
LENGTH	1500'
ACCEL.	300'
NO. LANES	2

SEGMENT NO.	11 NB
TYPE	BASIC
LENGTH	300'
NO. LANES	2

SEGMENT NO.	6 NB
TYPE	DIVERGE
LENGTH	1500'
DECEL.	320'
NO. LANES	2

SEGMENT NO.	9 NB
TYPE	BASIC
LENGTH	300'
NO. LANES	2

SEGMENT NO.	8 NB
TYPE	MERGE
LENGTH	1500'
ACCEL.	220'
NO. LANES	2

SEGMENT NO.	7 NB
TYPE	BASIC
LENGTH	2740'
NO. LANES	2

Figure 15. Alternative 3.1 – Summary of 2045 LOS

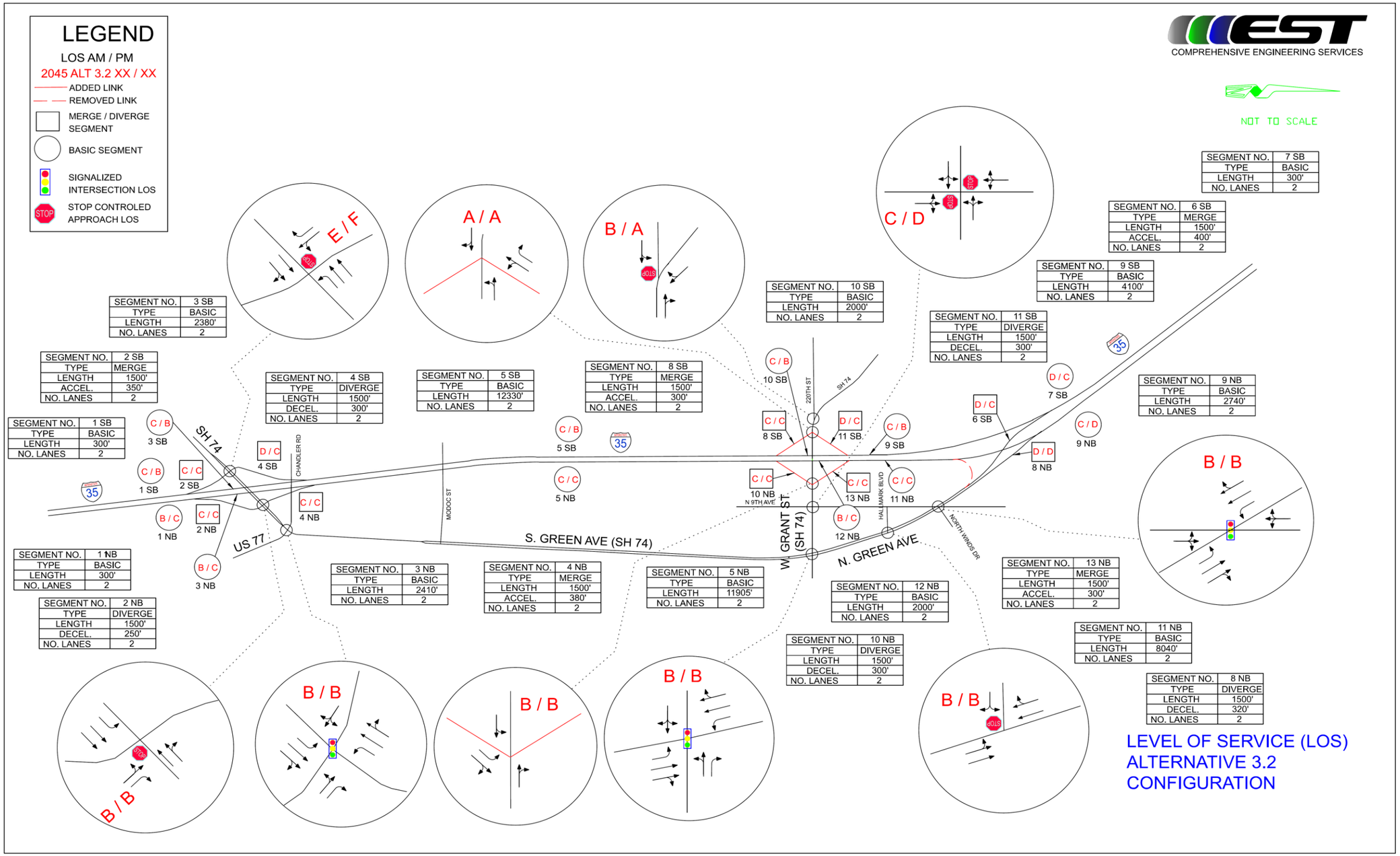


Figure 16. Alternative 3.2 – Summary of 2045 LOS

6.4 Incident Management

The total travel times to the hypothetical incident locations were determined for each alternative. Incident management response distance and time traveled to access the hypothetical incident locations (shown in **Figure 6**) are summarized in **Table 14** to **Table 16** The travel time savings is the total travel time calculated for each alternative (from fire/police and EMS departments to the incident location and from the incident location to the hospital) compared to the travel time basis shown in **Table 8.**

The shortest path to and from the incident locations for existing roadway network and each alternative are shown in **Appendix D.** The paths are shown considering the three existing and one new emergency crossovers on I-35. Exiting crossovers: one located approximately 2000 feet north of N Green Avenue, second is located approximately 2000 feet north of W Grant Street, and the third is located approximately 1.35 mile south of W Grant Street. A proposed emergency crossover location is assumed at approximately 2000 feet south of W Grant Street.

Table 14. Alternative 1 – Mile/Time Travel Analysis to/from the Hypothetical Incident Locations

Hypothetical Incident Location	Dir	Alternative 1											
		(from) Fire/Police Department			(from) Wadley EMS			(To) Hospital			Total Response Time (Min)	Total Time 2045 Existing + Committed (Basis) (Min)	Total Response Time Saving (Min)
		Distance (Mile)		Travel Time (Min)	Distance (Mile)		Travel Time (Min)	Distance (Mile)		Travel Time (Min)			
		City Road	I-35		City Road	I-35		City Road	I-35				
1) I-35 N/O N. Green Ave	NB	1.5	0.6	3.1	2.7	0.6	5.1	1	5.6	6.4	14.6	14.6	0.0
	SB	1.5	5	6.9	2.7	5	8.9	1	1.2	2.7	18.5	18.5	0.0
2) I-35 N/O W. Grant St	NB	0.6	1.35	2.2	1.8	1.35	4.2	1	0.9	2.4	8.8	15.8	7.0
	SB	0.6	1.75	2.5	1.8	1.75	4.6	1	2.5	3.8	10.9	15.4	4.5
3) I-35 S/O W. Grant St	NB	0.6	0.8	1.7	1.8	0.8	3.8	1	1.4	2.9	8.4	15.5	7.0
	SB	0.6	0.3	1.3	1.8	0.3	3.3	1	1.9	3.3	7.9	15.9	8.0
4) I-35 N/O SH-74	NB	0.77	4.11	4.8	2.17	0.82	4.4	1	3.5	4.6	13.8	15.6	1.8
	SB	0.6	2.35	3.0	1.8	2.35	5.1	1	5.3	6.1	14.2	18.8	4.6
5) I-35 S/O SH-74	NB	0.6	11.86	11.2	2.34	8.57	11.4	1	5.7	6.5	29.1	31.3	2.2
	SB	0.6	4.62	5.0	2.34	1.33	5.2	1	13	12.7	22.9	25.1	2.2

Table 15. Alternative 2.1 – Mile/Time Travel Analysis to/from the Hypothetical Incident Locations

Hypothetical Incident Location	Dir	Alternative 2 (2.1)											
		(from) Fire/Police Department			(from) Wadley EMS			(To) Hospital			Total Response Time (Min)	Total Time 2045 Existing + Committed (Basis) (Min)	Total Response Time Saving (Min)
		Distance (Mile)		Travel Time (Min)	Distance (Mile)		Travel Time (Min)	Distance (Mile)		Travel Time (Min)			
		City Road	I-35		City Road	I-35		City Road	I-35				
1) I-35 N/O N. Green Ave	NB	1.5	0.6	3.1	2.7	0.6	5.1	1.0	5.6	6.4	14.6	14.6	0.0
	SB	1.5	5.0	6.9	2.7	5.0	8.9	1.0	1.2	2.7	18.5	18.5	0.0
2) I-35 N/O W. Grant St	NB	0.6	1.4	2.2	1.8	1.4	4.2	1.0	0.9	2.4	8.8	15.8	7.0
	SB	0.6	1.8	2.5	1.8	1.8	4.6	0.6	1.4	2.2	9.3	15.4	6.1
3) I-35 S/O W. Grant St	NB	0.6	0.8	1.7	1.8	0.8	3.8	0.6	0.3	1.3	6.8	15.5	8.7
	SB	0.6	0.3	1.3	1.8	0.3	3.3	0.6	0.8	1.7	6.3	15.9	9.6
4) I-35 N/O SH-74	NB	0.8	4.1	4.8	2.2	0.8	4.4	0.6	2.4	3.0	12.2	15.6	3.4
	SB	0.6	2.4	3.0	1.8	2.4	5.1	0.8	4.1	4.8	12.9	18.8	5.9
5) I-35 S/O SH-74	NB	0.6	11.9	11.2	2.3	8.6	11.4	0.6	4.6	5.0	27.6	31.3	3.7
	SB	0.6	4.6	5.0	2.3	1.3	5.2	0.6	11.8	11.2	21.4	25.1	3.7

Note: *Total travel times for Alternative 2.2 is similar to Alternative 2.1 from Fire/Police departments and from Wadley EMS to all accident locations and from all accident locations to hospital* ***except*** *by for accident location 2 at NB where the total travel time increases to 8.9 minutes (only 0.1 minute increase due to the removal of the NB off-ramp at N Green Ave interchange)*

Table 16. Alternative 3.1 – Mile/Time Travel Analysis to/from the Hypothetical Incident Locations

Hypothetical Incident Location	Dir	Alternative 3 (3.1)											
		(from) Fire/Police Department			(from) Wadley EMS			(To) Hospital			Total Response Time (Min)	Total Time 2045 Existing + Committed (Basis) (Min)	Total Response Time Saving (Min)
		Distance (Mile)		Travel Time (Min)	Distance (Mile)		Travel Time (Min)	Distance (Mile)		Travel Time (Min)			
		City Road	I-35		City Road	I-35		City Road	I-35				
1) I-35 N/O N. Green Ave	NB	0.5	1.9	2.5	1.7	1.9	4.5	1.0	5.6	6.4	13.4	14.6	1.2
	SB	0.5	6.3	6.2	1.7	6.3	8.3	1.0	1.2	2.7	17.2	18.5	1.3
2) I-35 N/O W. Grant St	NB	0.5	0.3	1.1	1.7	0.3	3.1	0.7	0.7	1.8	6.0	15.8	9.8
	SB	0.5	0.7	1.4	1.7	0.7	3.5	0.7	0.3	1.4	6.3	15.4	9.1
3) I-35 S/O W. Grant St	NB	0.6	0.8	1.7	1.8	0.8	3.8	0.6	0.3	1.3	6.8	15.5	8.7
	SB	0.6	0.3	1.3	1.8	0.3	3.3	0.6	0.8	1.7	6.3	15.9	9.6
4) I-35 N/O SH-74	NB	0.8	4.1	4.8	2.2	0.8	4.4	0.6	2.4	3.0	12.2	15.6	3.4
	SB	0.6	2.4	3.0	1.8	2.4	5.1	0.8	4.1	4.8	12.9	18.8	5.9
5) I-35 S/O SH-74	NB	0.6	11.9	11.2	2.3	8.6	11.4	0.6	4.6	5.0	27.6	31.3	3.7
	SB	0.6	4.6	5.0	2.3	1.3	5.2	0.6	11.8	11.2	21.4	25.1	3.7

Note: *There is no changes in toral travel times for Alternative 3.2 compared to Alternative 3.1 from Fire/Police departments and from Wadley EMS to all accident locations and from all accident locations to the Hospital.*

6.5 Measuring the Benefit of the Alternatives

The "benefit" of each Alternative is measured by the cost savings (in $) realized over the service life of the project by the reduction in overall delay cost to the traveling public plus the cost saved by the reduction of secondary crashes on I-35 because of faster incident response times.

$$Benefit\ (resulting\ from\ lower\ Emergency\ Response\ Times)\ (\$) = Total\ Delay\ Saving\ (\$) + Total\ Secondary\ Crash\ Saving\ (\$) \quad \text{(Equation 1)}$$

To calculate the monetary value for emergency response saving for each alternative, **reduced delay saving** and **secondary crash saving** measures are identified. The basic statistical data used in these calculations are:

- As shown in literature, the likelihood of a secondary crash happening for every minute that a lane is closed due to a primary crash ($\boldsymbol{SC_{Prob}}$) is 2.8% (*Benefits of Traffic Incident Management | National Operations Center of Excellence (transportationops.org)*).
- Similarly, it is shown that for every minute of the road closure due to an incident, in average, it will take four minutes ($\boldsymbol{\tau_{clear}}$) to clear the queue (*Benefits of Traffic Incident Management | National Operations Center of Excellence (transportationops.org) and* 2009 MITS Annual Report (michigan.gov)).
- For the value of time, ($\boldsymbol{VOT_{...}}$), cost calculations incorporate the Texas Transportation Institute (TTI) 2016 value of delay time for personal travel at $17.81 per person. The commercial value of travel time, based on the American Transportation Research Institute (ATRI) annual survey modified by speed, type of vehicle, and vehicle occupancy, is estimated to be $53.69 per vehicle per hour for 2016. (https://static.tti.tamu.edu/tti.tamu.edu/documents/TTI-2017-10.pdf).
- Effective from July 2017, Researchers now estimate for the average passenger car occupancy rate, $\boldsymbol{PC_{OR}}$, is 1.50 persons per vehicle, based on data from the National Household Travel Survey for all trips (https://static.tti.tamu.edu/tti.tamu.edu/documents/TTI-2017-9.pdf).
- For this calculation, the service life, ($\boldsymbol{SL}$), of the facility is assumed to be 30 years.

6.5.1 – Time savings

The basis of average time savings used in this analysis for each of the alternatives comes from **Section 6.4** of this report and summarized in **Table 17** below:

Table 17. Average Emergency Response Time Saving for Existing and the Three Alternatives

		Emergency Time Response (min)		Time Saving (min)			Average Saving / Alt. (min)
Alternative	**Incident * Location**	NB	SB	NB	SB	Total Saving	NB/SB (L2&L3)
Existing	L2	13.4	10.3	0	0	0	0
	L3	12.6	11.2	0	0	0	
Alt. 1	L2	6.4	7.1	7	3.2	10.2	**6**
	L3	5.5	4.6	7.1	6.6	13.7	
Alt. 2	L2	6.4	7.1	7	3.2	10.2	**6**
	L3	5.5	4.6	7.1	6.6	13.7	
Alt. 3	L2	4.2	4.9	9.2	5.4	14.6	**7.1**
	L3	5.5	4.6	7.1	6.6	13.7	

*L2: Incident Location on I-35 north of Grant Street, L3: Incident Location on I-35 south of Grant Street

6.5.2 – Reduced Delay Savings

To determine the monetary value for **reduced delay saving** for each alternative, **Equation 2** is identified according to the queuing analysis where the schematic is shown in **Figure 17.** According to the literature (*Benefits of Traffic Incident Management | National Operations Center of Excellence (transportationops.org)* *and* 2009 MITS Annual Report (michigan.gov)), four minutes clearance time is used as the time to clear queue for every minute that the road is closed.+

$$Total\ Delay\ Saving\ (\$) = Passenger\ Car\ Delay\ Saving\ (\$) + Truck\ Delay\ Saving\ Time\ (\$) \quad \text{(Equation 2)}$$

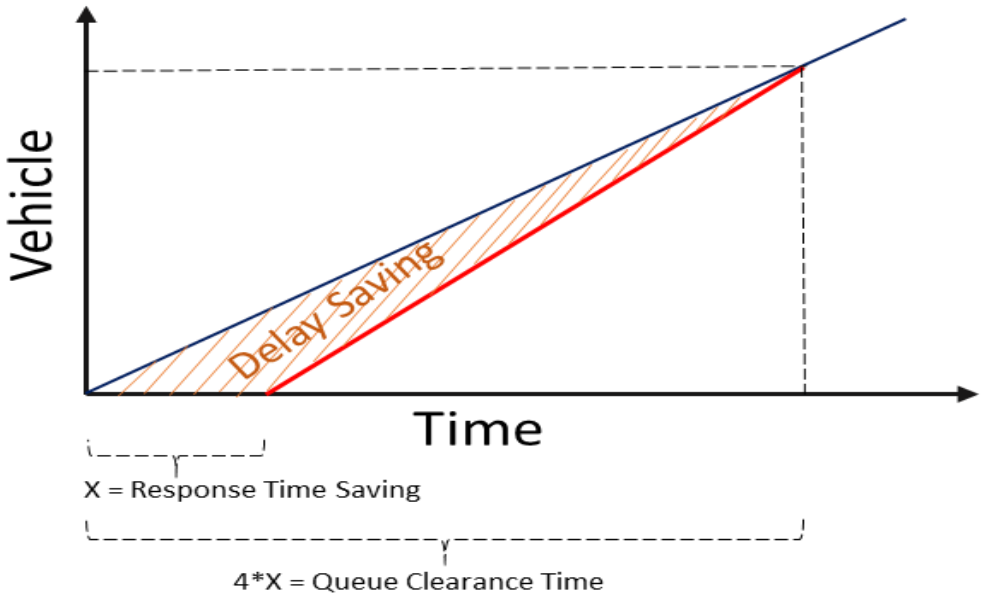


Figure 17. Delay Savings: Time to Vehicle Relationship

Where:

$$Passenger\ Car\ Delay\ Saving\ (\$) = \frac{1}{2}\left[\frac{PCV_{PHV}}{60} * (T_{Alt} * \tau_{clear}) * (1 - T_{Alt})\right] * PC_{OR} * C_{Annual} * \frac{1}{60} VOT_P * SL$$

(Equation 3)

$$Truck\ Delay\ Saving\ (\$) = \frac{1}{2}\left[\frac{TV_{PHV}}{60} * (T_{Alt} * \tau_{clear}) * (1 - T_{Alt})\right] * C_{Annual} * \frac{1}{60} VOT_T * SL$$

(Equation 4)

The time saved by faster incident response was applied to the volume of vehicles that would benefit from less delay both for automobile volumes (factored for occupancy) and commercial vehicle volumes. The basis for this analysis is the Queuing Theory following the “D/D/1” type with the assumption of “Arrival with Uniform Deterministic / Departure with Uniform Deterministic / Through One Channel” and that the Arrival rate being greater than the Departure Rate. Estimating the delay time saving, a value of time was applied to the time saved to determine the benefit in delay saving per incident. The average number of crashes per year and service life duration were then applied to determine the total benefit during the service life of the facility.

6.5.3 – Secondary Crash Savings

The cost saved for the secondary crashes typically experienced during delays (and the resulting queues) on interstate highways was determined by applying a historical factor to the crash history of the section of highway being studied. The five-year crash data (from January 2015 to December 2019) was collected from Oklahoma State safety website, *SAFE-T: Statewide Analysis for Engineering & Technology* for the section of I-35 between north turn-around at northbound off-ramp at Green Avenue and south turn-around north of the Walnut Creek. This Data shows a total of 63 crashes with an average of 12.6 crashes per year for this segment. The crash type and severity of crashes are shown in **Table 18**.

Table 18. Crash Type and Severity on I-35 – January 2015 to December 2019

Location	Crash Type				
	Rear End	Barrier Related	Side Swipe Same	Rollover	Other
I-35 -N/O Creek to S/O NB off-ramp at Green Ave.	23	17	16	4	1
	Severity (No. (%))				
	Fatality		Injury	PDO	
	1 (2%)		8 (12%)	57 (86%)	

To determine the monetary value for **secondary crash saving**, **Equation 5** is used:

$$Total\ Secondary\ Crash\ Saving\ (\$) = Fatality - Secondary\ Crash\ Saving\ (\$) + Injury - Secondary\ Crash\ Saving\ (\$) + PDO - Secondary\ Crash\ Saving\ (\$) \quad \text{(Equation 5)}$$

To determine the monetary value for **secondary crash saving**, first the secondary crash saving time over the life cycle of the project is identified using **Equation 6**:

$$Secondary\ Crash\ Saving\ (minute) = SC_{Prob} * C_{Annnual} * T_{Alt} * SL \quad \text{(Equation 6)}$$

To define the cost for the secondary crash saving, national crash unit cost values from the *FHWA Highway Safety BCA Guide and Tools* shown in **Table 19** are used:

Table 19. Crash Unit Cost per Crash Severity Type, KABCO (2016 $) - FHWA

Severity	Comprehensive Crash Unit Cost (2016 dollars ($))
K	11,295,400
A	655,000
B	198,500
C	125,600
O	11,900

Where the KABCO scale for crash severity defines levels of injury severity:
"K" Fatal injuries include deaths which occur within thirty days following injury in a motor vehicle crash.
"A" Severe injuries include skull fractures, internal injuries, broken or distorted limbs, unconsciousness, severe lacerations, severe burns, and unable to leave the scene without assistance.
"B" Moderate injuries include visible injuries such as a "lump" on the head, abrasions, and minor lacerations.
"C" Minor injuries include hysteria, nausea, momentary unconsciousness, and complaint of pain without visible signs of injury.
"O" No fatality or injury; property damage only.

$$Fatality - Secondary\ Crash\ Saving\ (\$) = Secondary\ Crash\ Saving\ (minute) * \%Fatality * K_{cost}$$

(Equation 7)

$$Injury - Secondary\ Crash\ Saving\ (\$) = Secondary\ Crash\ Saving\ (minute) * \%Injurey *\ avg(A,B)_{cost}$$

(Equation 8)

$$PDO - Secondary\ Crash\ Saving\ (\$) = Secondary\ Crash\ Saving\ (minute) * \%PDO * O_{cost}$$

(Equation 9)

Where:

$\boldsymbol{Avg(A+B)_{cost}}$: *Injury crash type A and B average unit cost* (2016 $) *from KABCO*

$\boldsymbol{C_{Annual}}$: *Average annual number of crashes* (*SAFE-T* - January 2015 to December 2019)

$\boldsymbol{TV_{PHV}}$: *Truck peak hour volume* (vph)

$\boldsymbol{K_{cost}}$: *Fatality crash unit cost* (2016 $) *from KABCO*

$\boldsymbol{PC_{OR}}$: *Passenger car occupancy rate from TTI*

$\boldsymbol{PCV_{PHV}}$: *Passenger car peak hour volume* (vph)

$\boldsymbol{PDO_{cost}}$: *Property damage only crash unit cost* (2016 $) *from KABCO*

$\boldsymbol{SC_{Prob}}$: *likelihood of a secondary crash happening for every minute that a lane is closed due to a crash*

$\boldsymbol{SL}$: *Project service life* $(year)$

$\boldsymbol{T_{Alt}}$: *Average incident response time saving for each Alternative at Grant Street* $(minute)$

$\boldsymbol{\tau_{clear}}$: *Time in minutes to clear queue for every minute that the road is closed* $(minute)$

$\boldsymbol{VOT_P}$: *Value of time for passenger car* $(\$/Hr)$ *from TTI*, 2016

$\boldsymbol{VOT_T}$: *Value of time for Truck* $(\$/Hr)$, *from ATRI* 2016

$\%\boldsymbol{Fatality}$: *Percentage of fatality crashes per year*

$\%\boldsymbol{Injury}$: *Percentage of injury crashes per year*

$\%\boldsymbol{PDO}$: *Percentage of property damage only* (PDO) *crashes per year*

6.5.5 – Summary of Benefits

Based on the Equation 1 to Equation 9, **Table 20** summarizes the results of the analysis for each alternative. 5% annual growth in the value of benefit over the service life of the project is assumed.

Table 20. Monetary Benefit of Emergency Response Time Reduction for Alternatives

	Existing + Committed	Alternative 1	Alternative 2 (2.1)	Alternative 3 (3.1)
Total Benefit (Present Value ($) =	$0	$31,5749,50	$31,574,950	$37,624,945
Delay Savings($) **+** **Secondary Crash Saving($)**	$0	$1,204,249	$1,204,249	$1,686,283
	$0	$30,370,701	$30,370,701	$35,938,663

The delay cost analysis results show that Alternative 3 provides maximum benefit compared to Alternative 1 and Alternative 2.

6.5.6 – Summary of Costs

Table 21, below, summarizes the Interchange Construction Costs (excluding the widening cost of Mainline I-35) plus Right of Way/Utility Relocation cost estimated as part of the *Transportation Feasibility Study Report, April 2019*. The cost of widening Mainline I-35 has been eliminated from the Interchange Construction cost for Alternatives 2 and 3. The mainline widening is not necessary for creating the additional movements for Alternatives 2 and 3, which had been included in the design to accommodate ODOT's future six-lane vision for I-35.

Table 21. Estimated Construction Cost for each Alternatives

	Existing + Committed	Alternative 1	Alternative 2 (2.1)	Alternative 3 (3.1)
Estimated Cost ($) =	**$0**	**$6,529,576**	**$8,600,000**	**$11,700,000**
Interchange Construction (excluding Mainline I-35)	$0	$6,000,000	$6,700,000	$9,800,000
+ Right of Way /Utility Relocation	$0	$529,576	$1,900,000	$1,900,000

7 ALTERNATIVE COMPARISONS

Table 22 shows the summary of the criteria for the 2045 Design Traffic on the Existing + Committed network as well as for the three alternatives.

Table 22. Summary of Criteria for the Alternatives

P&N Selection Criteria	MOE	Existing + Committed	Alternative 1	Alternative 2 (2.1)	Alternative 3 (3.1)
Mobility*	NB I-35 – LOS/Density (AM | PM)	C/17.9 | C/21.4	C/17.9 | C/21.4	C/17.9 | C/21.6	C/18.3 | D/22.0
	SB I-35 – LOS/Density (AM | PM)	D/22.4 | C/16.2	D/22.3 | C/16.5	D/22.3 | C/16.5	D/22.7 | C/16.8
Incident* Management (Response Time in Minute)**	Location 2: I-35 N/O W. Grant St – NB: Total time (min) accessing to/from**(Total)	13.4 / 2.4 (15.8)	6.4 / 2.4 (8.8)	6.4 / 2.4 (8.8)	4.2 / 1.8 (6)
	Location 2: I-35 N/O W. Grant St – SB: Total time (min) accessing to/from**(Total)	10.4 / 5.1 (15.5)	7.1 / 3.8 (10.9)	7.1 / 2.2 (9.3)	4.9 / 1.4 (6.3)
	Location 3: I-35 S/O W. Grant St – NB: Total time (min) accessing to/from**(Total)	12.6 / 2.9 (15.5)	5.5 / 2.9 (8.4)	5.5 / 1.3 (6.8)	5.5 / 1.3 (6.8)
	Location 3: I-35 S/O W. Grant St - SB Total time (min) accessing to/from**(Total)	11.2 / 4.7 (15.9)	4.6 / 3.3 (7.9)	4.6 / 1.7 (6.3)	4.6 / 1.7 (6.3)
Benefit	Delay + Secondary Crash Saving	$0	$31,5749,50	$31,574,950	$37,624,945
	Estimated Cost	$0	$6,529,576	$8,600,000	$11,700,000
	Benefit / Cost	0.0	4.8	3.7	3.2

*: Operational analysis results presented in **Table 11** is the basis for the Mobility.

: from Fire, Police, and EMT **TO Incident / **FROM** Incident to Hospital

****: Only the response times for the hypothetical accident locations 2 and 3, north and south, of W. Grant Street (SH-74) are reflected in MOE table from the incident management analysis.

7.1 Matrix of Evaluation

Table 23, below, summarizes the observed results of the alternative analysis based on the criteria shown in **Table 22**.

Table 23. Observed Results of the Alternative Criteria

Criteria	Observed Comparisons
Mobility on Interstate (pc/mi/ln)	All Alternatives show a slight increase in delay over the Existing network – all of which are statistically insignificant where the worst results in a 0.6 pc/mi/ln increase in Density (Alternative 3). All show a LOS of D or better.
Incident Management (Total Response Time)	The best time savings is achieved with Alternative 3
Cost of Delay (Benefit)	The most significant benefit is achieved with Alternative 3. This alternative has a B/C ratio of greater than 1.0.

7.2 Recommended Alternative and Proposed Action

According to the analysis, Alternative 3, full interchange access at W. Grant Street (SH-74), is the best Alternative and is recommended as the proposed action.

Alternative 3 provides the following additional advantages:

- Satisfies the FHWA Policy on Access to the Interstate Systems (May 22, 2017) requiring that "the proposed access … will provide for all traffic movements.". Alternatives 1 and 2 do not satisfy this consideration and requirement.
- While all alternatives provide benefits compare to the Existing + Committed condition, Alternative 3 provides the highest monetary benefit value of $37,624,945 in delay reduction and secondary crash prevention savings (**Table 20**).

- Would provide the fastest response time among all other alternatives. Comparing to 2045 Existing + Committed network, Alternative 3 saves more than 40% on average for the City Fire, Police, and EMS departments to access any incident location on I-35, north and south of W. Grant Street and saves time returning to the City Hospital from the incident location.
- Overall mobility, accessibility and connectivity would be improved with Alternative 3 across the City network.
- With the addition of the new interchange at W Grant Street (SH-74), I-35 facility LOS stayed unchanged. The overall Delay and LOS at the existing TWSC intersection at SB I-35 off ramp and SH-74 improved from LOS F to E during the AM Peak hour and the southbound critical approach Delay improved more than 40% from 115.8 sec/veh to 67.4 sec/veh during the PM peak hour.

APPENDIX A TRAFFIC DATA DEVELOPMENT MEMO AND MAPS

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Comprehensive Engineering Services

Memo # 1: Traffic Data Development, 2020 Raw Traffic Data

To: Mr. Matthew Blakeslee
From: Jerod Wilkins
Date: June 26, 2020

Reference: **Purcell-I-35 Interchange**

Introduction

This memo presents the methodology and assumptions used to develop the 2020 raw traffic data map from the traffic data collected on Tuesday June 16, 2020 within the study area. It also describes the steps to develop the 2020 and 2045 "Design" traffic data maps.

Raw Traffic Data Development

Below is a description of the types of 2020 raw traffic data collected within the study area:

- **24 Hour Directional** counts on I-35 mainline, on/off ramps, and Grant Street (19 locations)
- **24 Hour TMC (Traffic Movement Count)** at the intersection of N Green Avenue and W Grant Street (1 location)
- **Typical AM/PM TMC** during 6:00 AM to 9:00 AM and 3:00 PM to 6:00 PM time periods, at 9 intersections

Figure 1, below, shows the location of collected traffic count data.

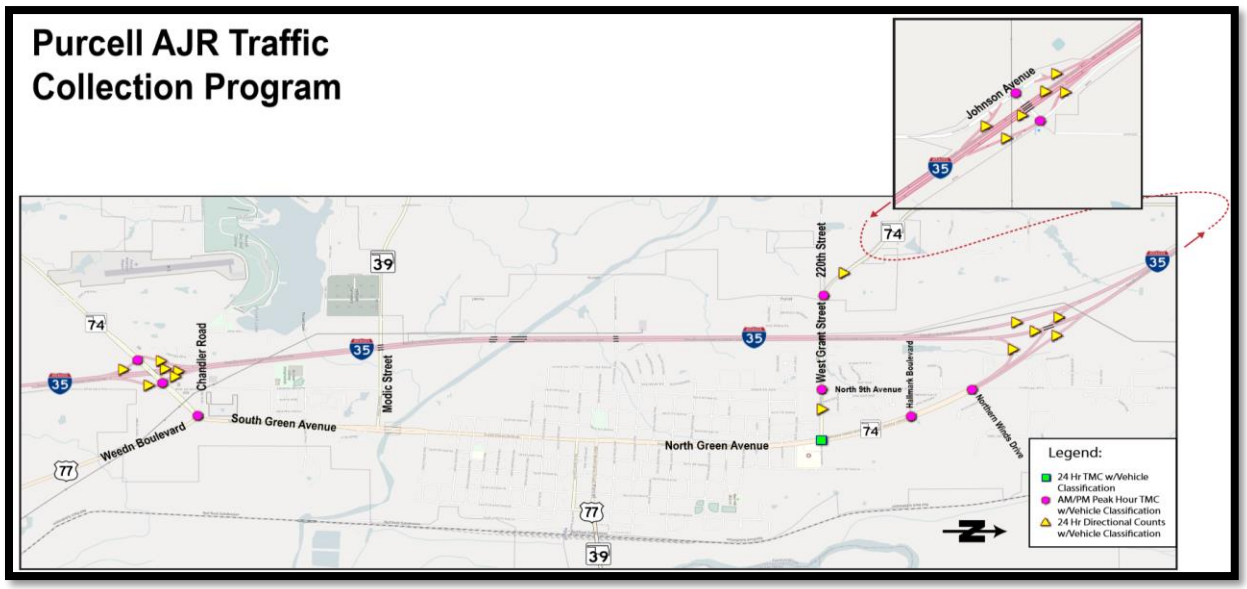

Figure 1: Traffic Data Collection Locations along the Study Area

Raw Data Quality Control

QA/QC was performed on raw traffic data at the intersections, On/Off Ramps, mainline I-35, and Grant Street. The goal was to identify anomalies and outliers, or missing data. The raw data was found to be reasonably consistent and acceptable.

We made an observation that Highest Hourly Count (HHC) determined from the 24-Hour traffic counts did not necessarily fall into typical AM/PM time periods, at all locations. During the development of "Design" traffic data map for existing +committed configuration, volumes will be balanced.

Raw Traffic Data Map-Roadway Segments

Raw traffic data displayed on the roadway segments of the "2020 Raw Traffic Data Map" (enclosed) are labeled as Daily and AM/PM/HHC volumes where:

- Daily: 24 Hour directional daily traffic count
- AM: Typical AM peak hour volume between 6:00 AM to 9:00 AM
- PM: Typical PM peak hour volume between 3:00 PM to 6:00 PM
- HHC: Highest hourly count during a 24-Hour count collection

Note: HHC should either be equal to one of the typical AM./ PM peak hour volumes or higher than the two.

Raw Traffic Data Map-Intersection Turning Movements

AM/PM peak hour volumes shown at each intersection were defined from the collected TMC during the typical AM/PM time period, except at the intersection of N Green Avenue and W Grant Street, where 24 Hour TMC counts were collected. Raw data at this intersection is reported for both typical AM/PM peak hours and HHC (i.e., AM/PM/HHC)

Developing 2020 (2045) design traffic data

Below are the steps and assumptions that are proposed to be applied to determine the 2020 and 2045 design traffic data:

1- Apply the seasonal adjustment and axel adjustment factors (provided by Oklahoma Department of Transportation (ODOT)) to 24 Hour raw traffic data
2- Apply the adjustment rates of 8% (City roadways) and 10% (highway links) to account for COVID-19
3- Apply the requested K and D factors for this area from ODOT and further adjust the traffic volumes to accommodate for Design Hourly Volume (DHV) and Directional Design Hourly Volume (DDHV).

4- Adjust typical AM/PM peak hour volumes to the corresponding AM/PM highest hourly volumes from 24-Hour data (if different), to ensure design concepts can accommodate the potentially higher volumes. This will also facilitate consistency in balancing the traffic data within the study area.

Note: 2020 Raw Traffic Data Map is enclosed.

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Comprehensive Engineering Services

Memo # 2: Traffic Data Development, 2020 Design Traffic Data

To: Mr. Matthew Blakeslee
From: Jerod Wilkins
Date: July 20, 2020

Reference: **Purcell-I-35 Interchange**

Introduction

This memo presents the methodology and assumptions used to develop the enclosed 2020 design traffic data map from the raw traffic data collected on Tuesday June 16, 2020 within the study area. Before making any adjustment to the raw traffic data for design volumes, we applied the following adjustment rates to account for the traffic reduction due to the COVID-19 situation at the time of data collection:

8% on the City roadways
10% on the highway links

These rates were approved by ODOT on 6/29/2020 to account for the traffic volume depression and increase the raw traffic counts collected in June 2020.

Design Traffic Data Development

Below are the steps, assumptions, adjustment rates and balancing methodologies that were applied to determine the 2020 design traffic data.

Annual Average Daily Traffic (AADT) Volumes

Annual average daily traffic (AADT) is the total traffic volume on a roadway facility for a year divided by 365 days.

Oklahoma Department of Transportation (ODOT) provided seasonal adjustment and axel adjustment factors on 6/29/2020 that were used to properly annualize short duration traffic counts (24-Hour/Peak Hour counts). The following provided adjustment rates by ODOT were applied to 24-Hour and Peak Hour counts to generate adjusted AADT and Peak Hour volumes along the study area.

I-35 highway links
Axel Adjustment Rate = 0.809
Seasonal Adjustment Rate = 1.025

City roadway links
Axel Adjustment Rate = 0. 880
Seasonal Adjustment Rate = 0.893

Using the above two factors, the short term collected counts were adjusted to determine the AADT volumes on the links and at the intersections.

K and D Factor Adjustment

K Factor is the percentage of the AADT during the design hour, known as the Design Hourly Volume (DHV). DHV is usually the 30th highest hourly volume of the year expressed as a percentage of the AADT volume.

The following K factors were provided by ODOT on 6/29/2020):

K = 10%, I-35 highway links
K = 11%, City roadway links

D Factor is the percentage of traffic moving in the peak travel direction, known as Directional Design Hourly Volume (DDHV) during the DHV. It is calculated by dividing the higher directional volume occurring in DHV by the total roadway volume for that hour.

The following D factors were provided by ODOT on 6/29/2020):

D = 56%, I-35 highway links
D = 54%, City roadway links

Through an iterative process, the previously calculated AADTs were adjusted to best march the above K and D factors.

Subsequently, further adjustments were made to turning movement volumes per the methodology proposed in Memo # 1 and approved by ODOT.

Finally, slight adjustments were made to ensure that traffic volumes are balanced throughout the system.

2045 Design Traffic Data

As recommended by ODOT on 6/29/2020, the following **flat annual growth rates** will be applied to project the design traffic volumes to 2045.

I-35 highway: 1.5%
City area: 2%

LEGEND

Daily
AM / PM / HHC

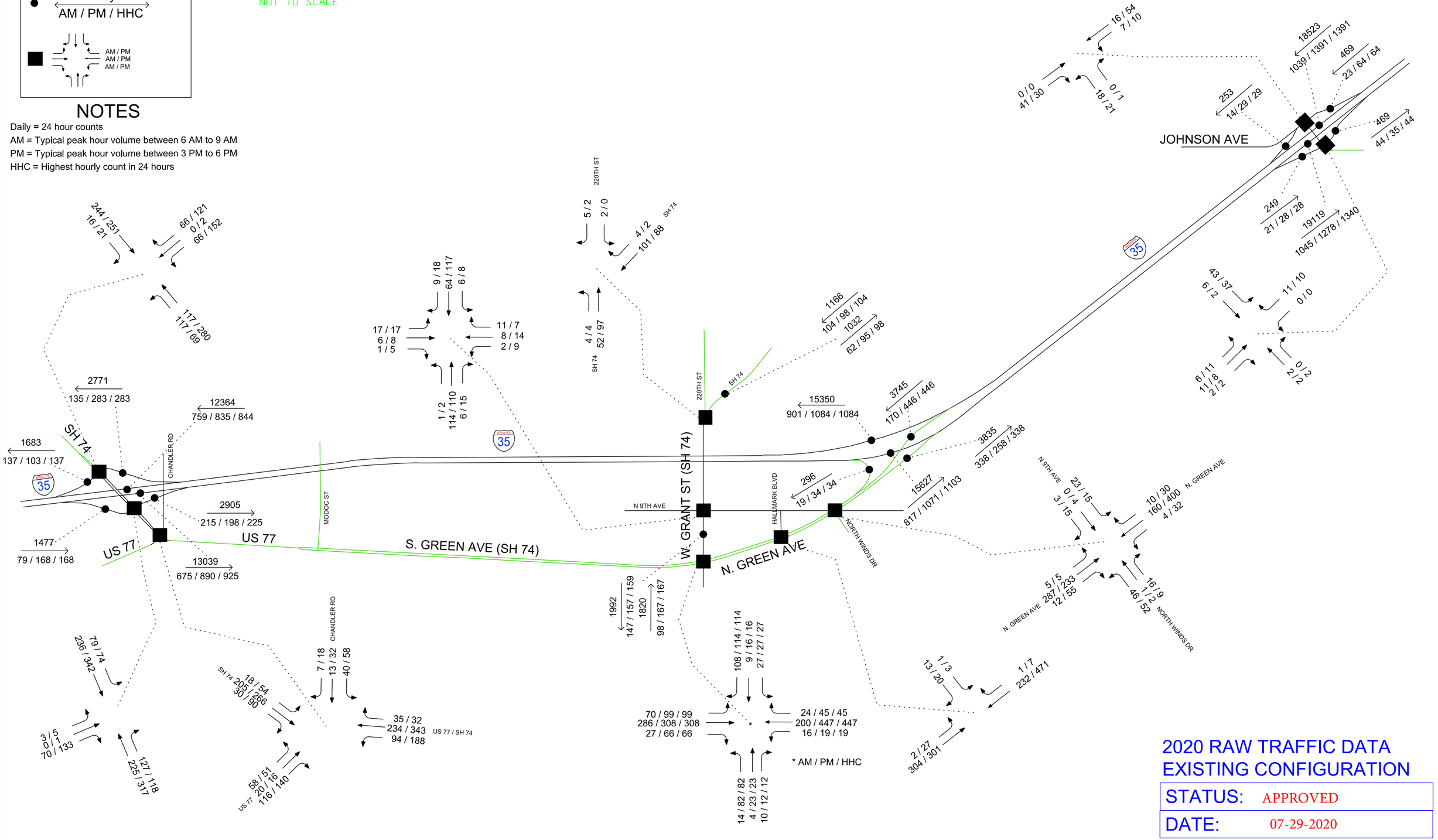
AM / PM
AM / PM
AM / PM

NOT TO SCALE

NOTES

Daily = 24 hour counts
AM = Typical peak hour volume between 6 AM to 9 AM
PM = Typical peak hour volume between 3 PM to 6 PM
HHC = Highest hourly count in 24 hours

COMPREHENSIVE ENGINEERING SERVICES



2020 RAW TRAFFIC DATA
EXISTING CONFIGURATION

STATUS:	APPROVED
DATE:	07-29-2020

LEGEND

AADT
AM / PM

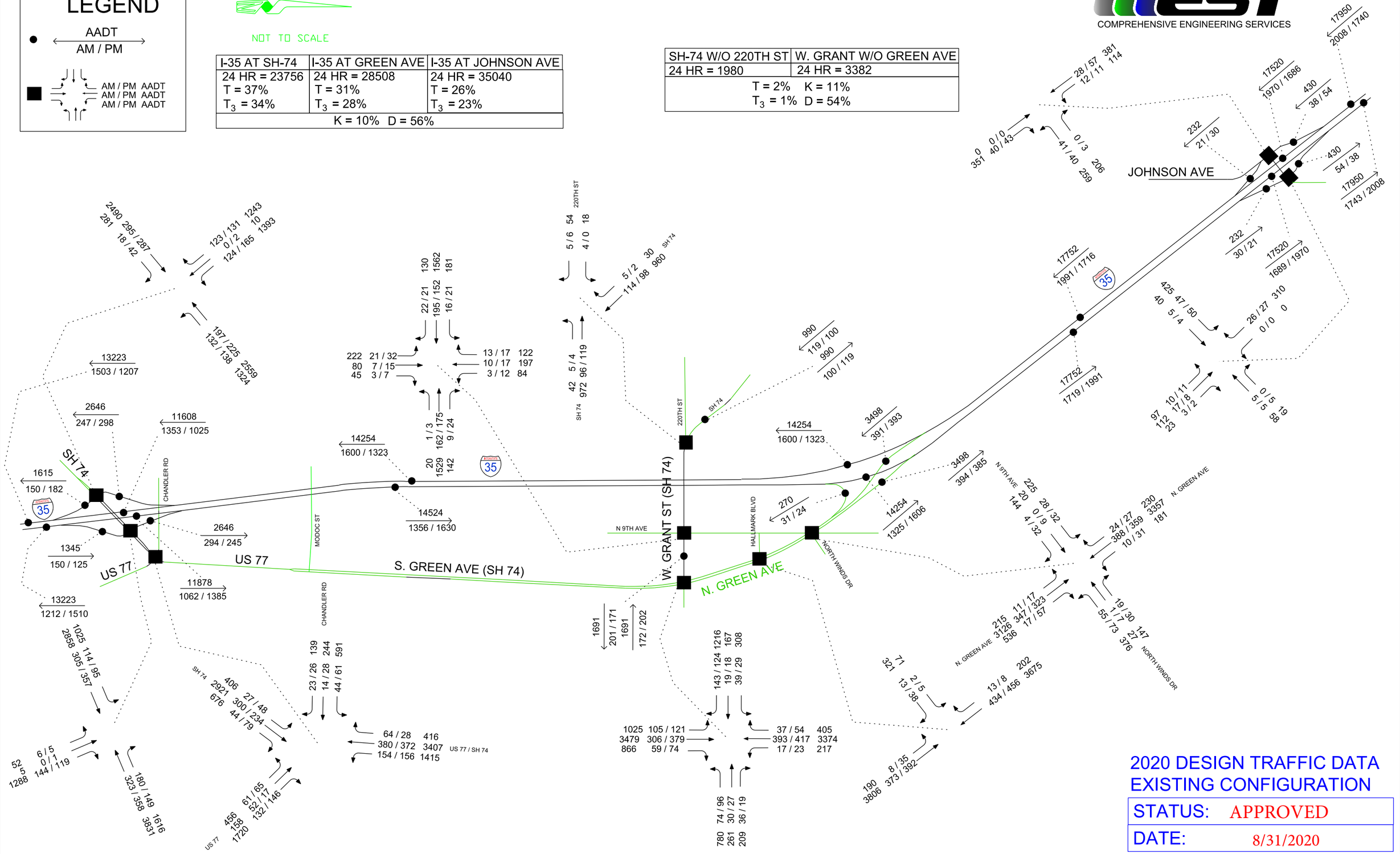
AM / PM AADT
AM / PM AADT
AM / PM AADT

NOT TO SCALE

I-35 AT SH-74	I-35 AT GREEN AVE	I-35 AT JOHNSON AVE
24 HR = 23756 T = 37% T_3 = 34%	24 HR = 28508 T = 31% T_3 = 28%	24 HR = 35040 T = 26% T_3 = 23%
K = 10% D = 56%		

SH-74 W/O 220TH ST	W. GRANT W/O GREEN AVE
24 HR = 1980	24 HR = 3382
T = 2% K = 11% T_3 = 1% D = 54%	

COMPREHENSIVE ENGINEERING SERVICES



2020 DESIGN TRAFFIC DATA
EXISTING CONFIGURATION

STATUS:	APPROVED
DATE:	8/31/2020

LEGEND

AADT
AM / PM

AM / PM AADT
AM / PM AADT

CLOSED SYSTEM

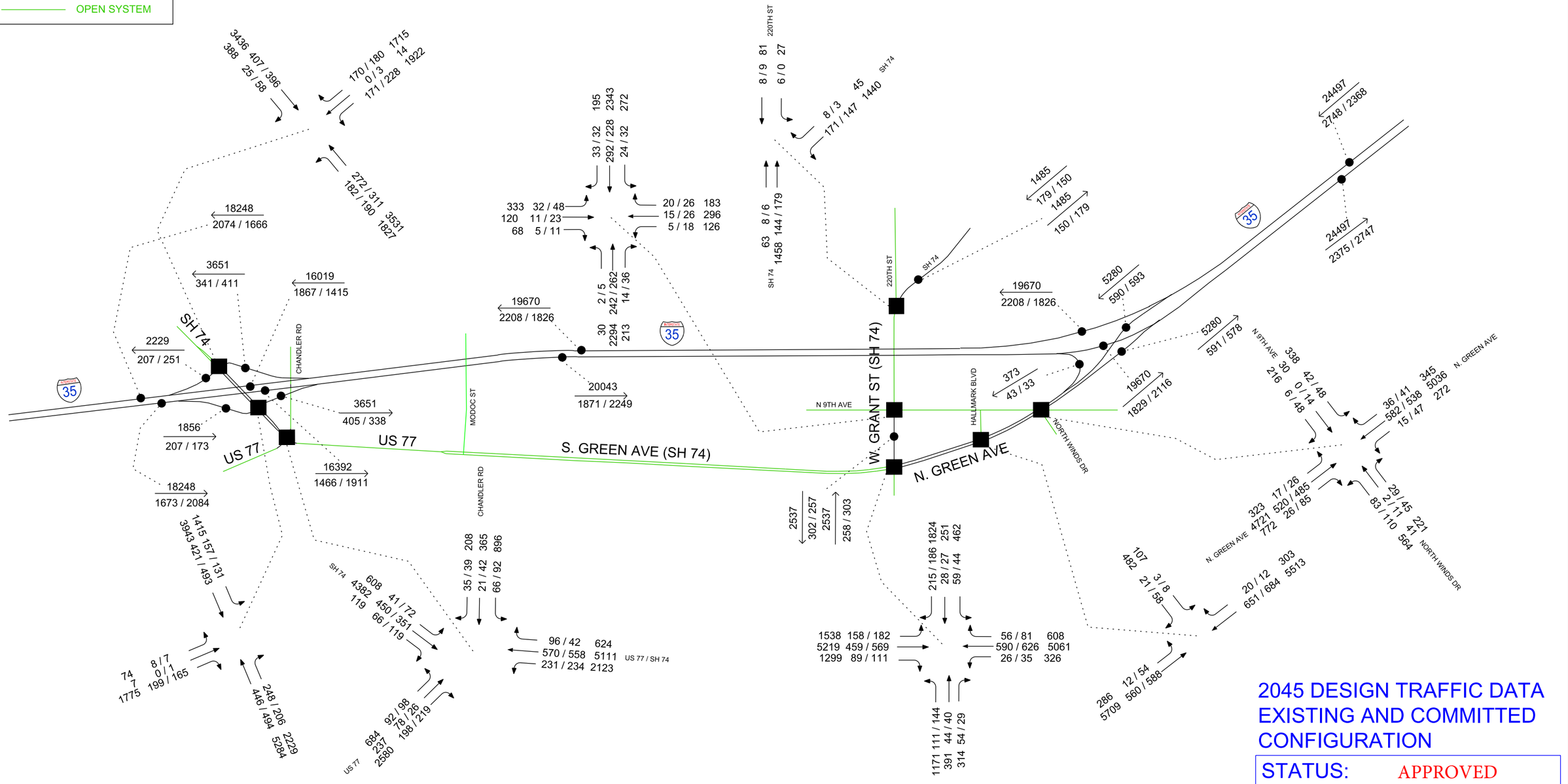
OPEN SYSTEM

COMPREHENSIVE ENGINEERING SERVICES

NOT TO SCALE

I-35 AT SH-74	I-35 AT GREEN AVE
24 HR = 32411	24 HR = 39340
T = 37%	T = 31%
T_3 = 34%	T_3 = 28%
K = 10% D = 56%	

SH-74 W/O 220TH ST	W. GRANT W/O GREEN AVE
24 HR = 2970	24 HR = 5074
T = 2% K = 11%	
T_3 = 1% D = 54%	



2045 DESIGN TRAFFIC DATA EXISTING AND COMMITTED CONFIGURATION

STATUS:	APPROVED
DATE:	09/14/2020

LEGEND

AADT
AM / PM

AM / PM AADT
AM / PM AADT
AM / PM AADT

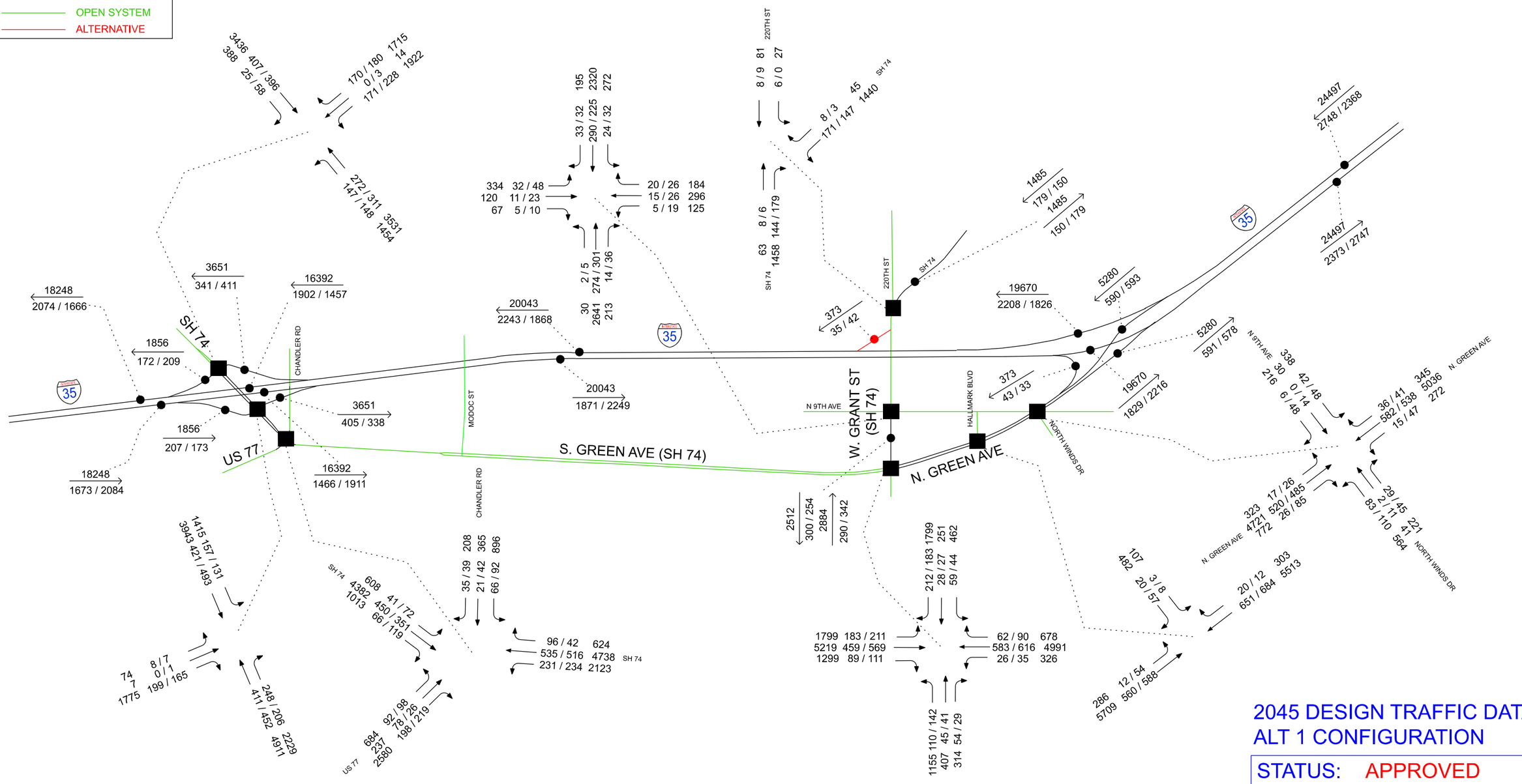
CLOSED SYSTEM
OPEN SYSTEM
ALTERNATIVE

I-35 AT SH-74	I-35 AT GREEN AVE
24 HR = 32,784 T = 37% T_3 = 34%	24 HR = 39,340 T = 31% T_3 = 28%
K = 10% D = 56%	

SH-74 W/O 220TH ST	W. GRANT W/O GREEN AVE
24 HR = 2970	24 HR = 5396
T = 2% K = 11% T_3 = 1% D = 54%	

COMPREHENSIVE ENGINEERING SERVICES

NOT TO SCALE



2045 DESIGN TRAFFIC DATA
ALT 1 CONFIGURATION

STATUS:	APPROVED
DATE:	10/23/2020

LEGEND

AADT
AM / PM

AM / PM AADT
AM / PM AADT
AM / PM AADT

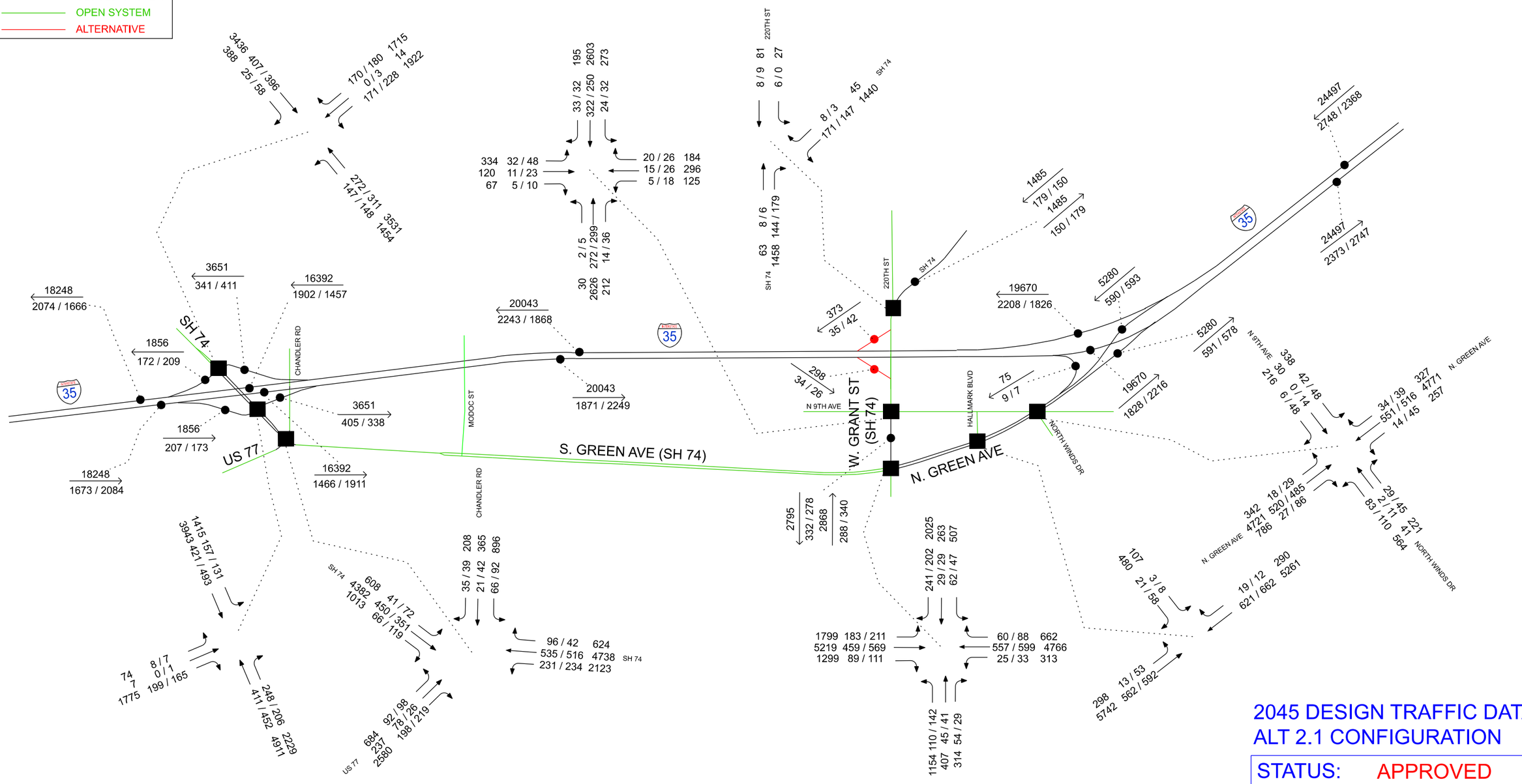
CLOSED SYSTEM
OPEN SYSTEM
ALTERNATIVE

I-35 AT SH-74	I-35 AT GREEN AVE
24 HR = 32,784 T = 37% T_3 = 34%	24 HR = 39,340 T = 31% T_3 = 28%
K = 10% D = 56%	

SH-74 W/O 220TH ST	W. GRANT W/O GREEN AVE
24 HR = 2970	24 HR = 5663
T = 2% K = 11% T_3 = 1% D = 54%	

COMPREHENSIVE ENGINEERING SERVICES

NOT TO SCALE



2045 DESIGN TRAFFIC DATA
ALT 2.1 CONFIGURATION

STATUS:	APPROVED
DATE:	10/23/2020

LEGEND

AADT
AM / PM

AM / PM AADT
AM / PM AADT
AM / PM AADT

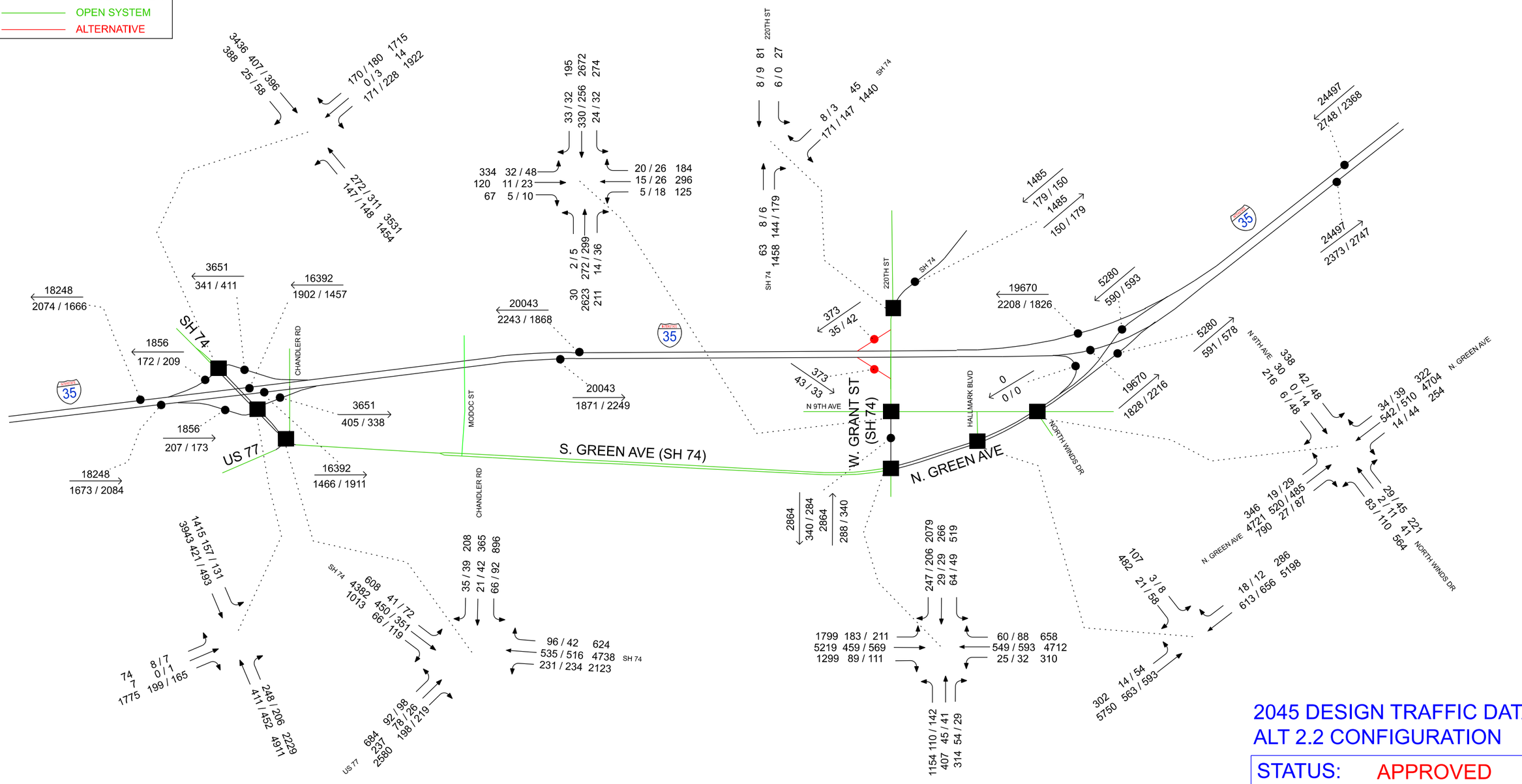
CLOSED SYSTEM
OPEN SYSTEM
ALTERNATIVE

I-35 AT SH-74	I-35 AT GREEN AVE
24 HR = 32784 T = 37% T_3 = 34%	24 HR = 39340 T = 31% T_3 = 28%
K = 10% D = 56%	

SH-74 W/O 220TH ST	W. GRANT W/O GREEN AVE
24 HR = 2970	24 HR = 5728
T = 2% K = 11% T_3 = 1% D = 54%	

COMPREHENSIVE ENGINEERING SERVICES

NOT TO SCALE



2045 DESIGN TRAFFIC DATA
ALT 2.2 CONFIGURATION

STATUS:	APPROVED
DATE:	10/23/2020

LEGEND

AADT
AM / PM

AM / PM AADT
AM / PM AADT
AM / PM AADT

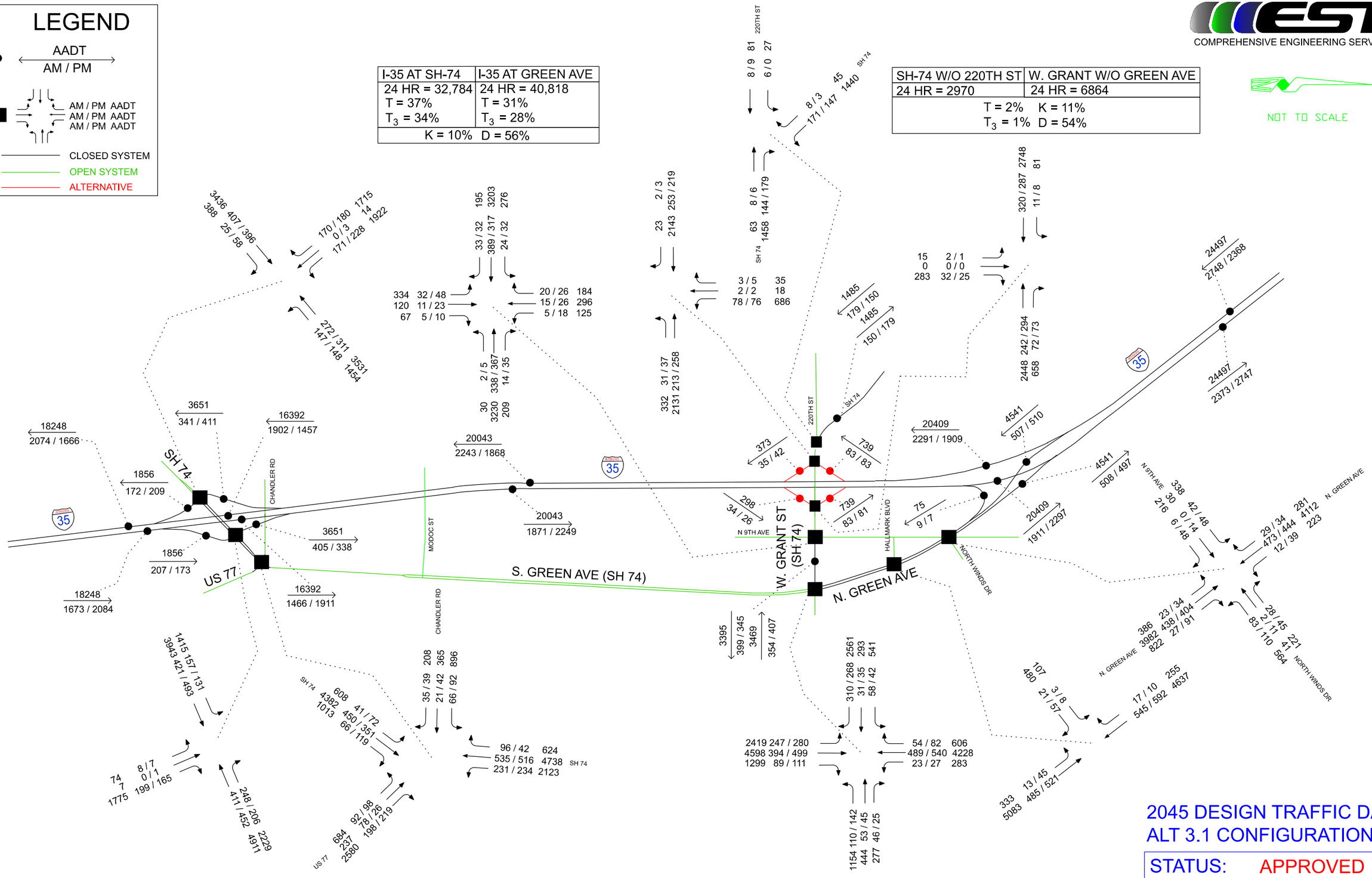
CLOSED SYSTEM
OPEN SYSTEM
ALTERNATIVE

I-35 AT SH-74	I-35 AT GREEN AVE
24 HR = 32,784	24 HR = 40,818
T = 37%	T = 31%
T_3 = 34%	T_3 = 28%
K = 10% D = 56%	

SH-74 W/O 220TH ST	W. GRANT W/O GREEN AVE
24 HR = 2970	24 HR = 6864
T = 2% K = 11% T_3 = 1% D = 54%	

COMPREHENSIVE ENGINEERING SERVICES

NOT TO SCALE



2045 DESIGN TRAFFIC DATA
ALT 3.1 CONFIGURATION

STATUS:	APPROVED
DATE:	10/23/2020

LEGEND

AADT
AM / PM

AM / PM AADT
AM / PM AADT
AM / PM AADT

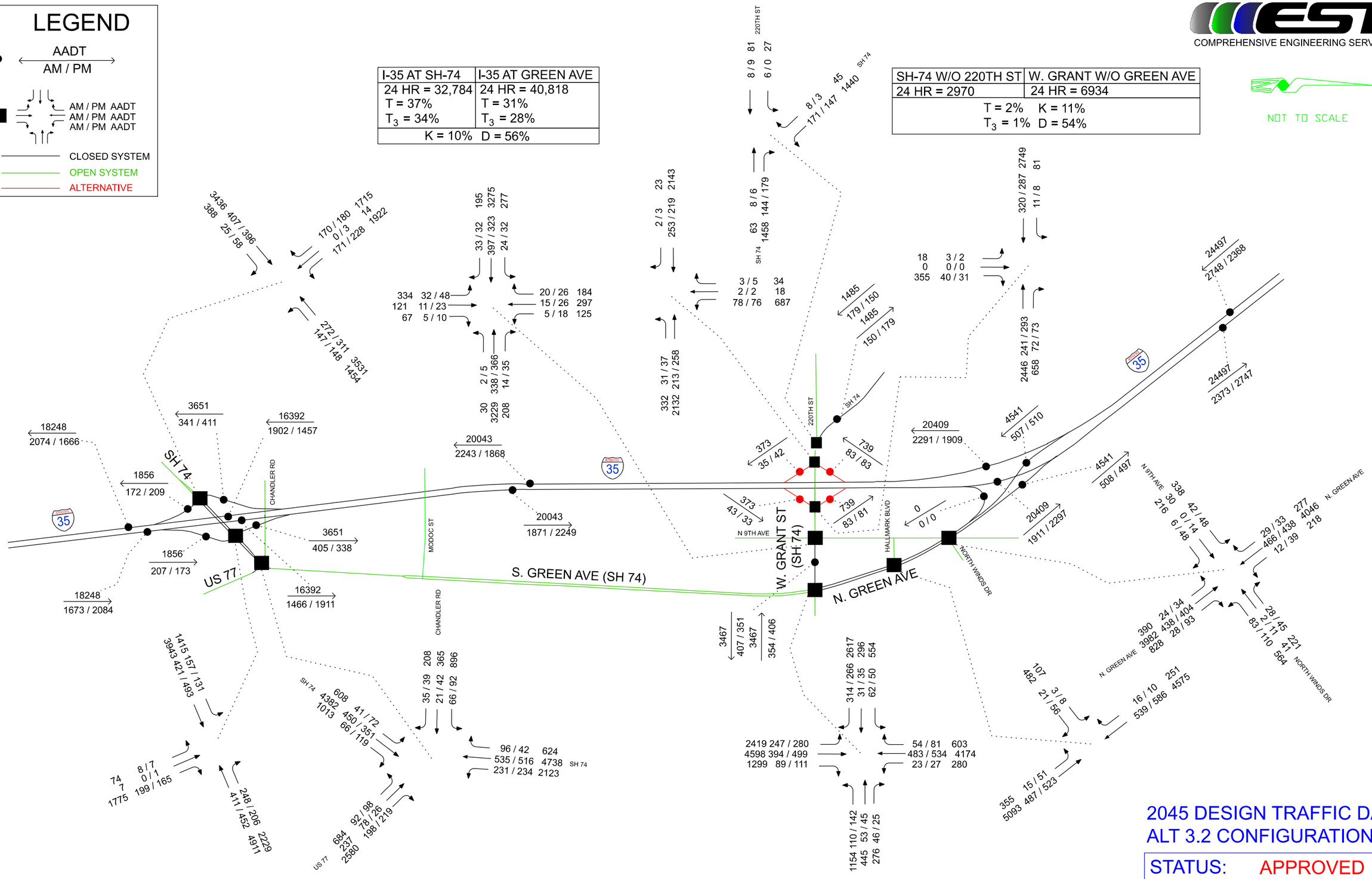
CLOSED SYSTEM
OPEN SYSTEM
ALTERNATIVE

I-35 AT SH-74	I-35 AT GREEN AVE
24 HR = 32,784	24 HR = 40,818
T = 37%	T = 31%
T_3 = 34%	T_3 = 28%
K = 10% D = 56%	

SH-74 W/O 220TH ST	W. GRANT W/O GREEN AVE
24 HR = 2970	24 HR = 6934
T = 2% K = 11% T_3 = 1% D = 54%	

COMPREHENSIVE ENGINEERING SERVICES

NOT TO SCALE



2045 DESIGN TRAFFIC DATA
ALT 3.2 CONFIGURATION

STATUS:	APPROVED
DATE:	10/23/2020

APPENDIX B SYNCHRO REPORTS (INTERSECTION ANALYSIS)

Intersection	
Int Delay, s/veh	6.3

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	124	0	123	0	295	18	132	197	0
Future Vol, veh/h	0	0	0	124	0	123	0	295	18	132	197	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	-	-	-	265	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	85	85	85	73	73	73	93	93	93
Heavy Vehicles, %	2	2	2	17	0	8	0	4	31	12	8	0
Mvmt Flow	0	0	0	146	0	145	0	404	25	142	212	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	698	925	106	-	0	0	429	0	0
Stage 1	496	496	-	-	-	-	-	-	-
Stage 2	202	429	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.5	7.06	-	-	-	4.34	-	-
Critical Hdwy Stg 1	6.14	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4	3.38	-	-	-	2.32	-	-
Pot Cap-1 Maneuver	343	271	909	0	-	-	1059	-	0
Stage 1	536	549	-	0	-	-	-	-	0
Stage 2	769	587	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	297	0	909	-	-	-	1059	-	-
Mov Cap-2 Maneuver	297	0	-	-	-	-	-	-	-
Stage 1	536	0	-	-	-	-	-	-	-
Stage 2	666	0	-	-	-	-	-	-	-

Approach	SB	NE	SW
HCM Control Delay, s	19	0	3.6
HCM LOS	C		

Minor Lane/Major Mvmt	NET	NER	SBLn1	SBLn2	SWL	SWT
Capacity (veh/h)	-	-	297	909	1059	-
HCM Lane V/C Ratio	-	-	0.491	0.159	0.134	-
HCM Control Delay (s)	-	-	28.3	9.7	8.9	-
HCM Lane LOS	-	-	D	A	A	-
HCM 95th %tile Q(veh)	-	-	2.6	0.6	0.5	-

Intersection	
Int Delay, s/veh	2.8

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	6	0	144	114	305	0	0	323	180
Future Vol, veh/h	0	0	0	6	0	144	114	305	0	0	323	180
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	130	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	79	79	79	75	75	75	85	85	85
Heavy Vehicles, %	2	2	2	67	0	14	6	7	0	0	8	7
Mvmt Flow	0	0	0	8	0	182	152	407	0	0	380	212

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	901	1303	204	592	0	-	-	-	0
Stage 1	711	711	-	-	-	-	-	-	-
Stage 2	190	592	-	-	-	-	-	-	-
Critical Hdwy	8.14	6.5	7.18	4.22	-	-	-	-	-
Critical Hdwy Stg 1	7.14	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.14	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.17	4	3.44	2.26	-	-	-	-	-
Pot Cap-1 Maneuver	181	162	767	953	-	0	0	-	-
Stage 1	309	439	-	-	-	0	0	-	-
Stage 2	660	497	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	152	0	767	953	-	-	-	-	-
Mov Cap-2 Maneuver	152	0	-	-	-	-	-	-	-
Stage 1	260	0	-	-	-	-	-	-	-
Stage 2	660	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	11.9	2.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NWLn1	NWLn2	SWT	SWR
Capacity (veh/h)	953	-	152	767	-	-
HCM Lane V/C Ratio	0.159	-	0.05	0.238	-	-
HCM Control Delay (s)	9.5	-	29.9	11.2	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.6	-	0.2	0.9	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	44	14	23	61	52	132	27	300	44	154	380	64
Future Volume (veh/h)	44	14	23	61	52	132	27	300	44	154	380	64
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1781	1263	1826	1900	1900	1574	1767	1796	1841	1781	1900
Adj Flow Rate, veh/h	60	19	32	71	60	0	31	349	51	177	437	74
Peak Hour Factor	0.73	0.73	0.73	0.86	0.86	0.86	0.86	0.86	0.86	0.87	0.87	0.87
Percent Heavy Veh, %	5	8	43	5	0	0	22	9	7	4	8	0
Cap, veh/h	260	47	59	272	111		127	629	91	229	754	127
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.00	0.08	0.21	0.21	0.13	0.26	0.26
Sat Flow, veh/h	757	362	453	853	851	1610	1499	2942	426	1753	2898	488
Grp Volume(v), veh/h	111	0	0	131	0	0	31	198	202	177	254	257
Grp Sat Flow(s),veh/h/ln	1572	0	0	1704	0	1610	1499	1678	1690	1753	1692	1694
Q Serve(g_s), s	0.0	0.0	0.0	0.3	0.0	0.0	0.7	3.6	3.7	3.4	4.5	4.6
Cycle Q Clear(g_c), s	2.1	0.0	0.0	2.3	0.0	0.0	0.7	3.6	3.7	3.4	4.5	4.6
Prop In Lane	0.54		0.29	0.54		1.00	1.00		0.25	1.00		0.29
Lane Grp Cap(c), veh/h	366	0	0	384	0		127	359	362	229	440	440
V/C Ratio(X)	0.30	0.00	0.00	0.34	0.00		0.24	0.55	0.56	0.77	0.58	0.58
Avail Cap(c_a), veh/h	995	0	0	1054	0		274	905	911	463	1050	1051
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.9	0.0	0.0	14.0	0.0	0.0	14.8	12.1	12.1	14.5	11.1	11.1
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.5	0.0	0.0	1.0	1.3	1.4	5.5	1.2	1.2
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	0.7	0.0	0.0	0.2	1.0	1.1	1.3	1.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.4	0.0	0.0	14.5	0.0	0.0	15.7	13.4	13.5	20.0	12.3	12.4
LnGrp LOS	B	A	A	B	A		B	B	B	B	B	B
Approach Vol, veh/h		111			131	A		431			688	
Approach Delay, s/veh		14.4			14.5			13.6			14.3	
Approach LOS		B			B			B			B	

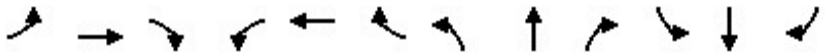
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.4	13.3		10.8	8.8	14.9		10.8				
Change Period (Y+Rc), s	* 5.9	* 5.9		* 6.3	* 5.9	* 5.9		* 6.3				
Max Green Setting (Gmax), s	* 9.1	* 19		* 20	* 6.3	* 21		* 19				
Max Q Clear Time (g_c+I1), s	5.4	5.7		4.1	2.7	6.6		4.3				
Green Ext Time (p_c), s	0.1	1.7		0.5	0.0	2.4		0.4				

Intersection Summary		
HCM 6th Ctrl Delay		14.1
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	19	143	74	30	36	105	306	59	17	393	37
Future Volume (veh/h)	29	19	143	74	30	36	105	306	59	17	393	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1796	1900	1900	1796	1900	1796	1811	1856	1900
Adj Flow Rate, veh/h	40	26	0	101	41	49	107	312	60	19	437	41
Peak Hour Factor	0.72	0.72	0.72	0.73	0.73	0.73	0.98	0.98	0.98	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	7	0	0	7	0	7	6	3	0
Cap, veh/h	234	94		352	69	225	161	933	177	42	777	73
Arrive On Green	0.14	0.14	0.00	0.14	0.14	0.14	0.09	0.31	0.31	0.02	0.24	0.24
Sat Flow, veh/h	441	672	0	1202	493	1610	1711	3027	575	1725	3259	304
Grp Volume(v), veh/h	66	0	0	142	0	49	107	184	188	19	236	242
Grp Sat Flow(s),veh/h/ln	1112	0	0	1695	0	1610	1711	1805	1797	1725	1763	1801
Q Serve(g_s), s	0.2	0.0	0.0	0.0	0.0	0.9	2.0	2.6	2.7	0.4	3.9	4.0
Cycle Q Clear(g_c), s	2.6	0.0	0.0	2.4	0.0	0.9	2.0	2.6	2.7	0.4	3.9	4.0
Prop In Lane	0.61		0.00	0.71		1.00	1.00		0.32	1.00		0.17
Lane Grp Cap(c), veh/h	328	0		420	0	225	161	556	554	42	420	429
V/C Ratio(X)	0.20	0.00		0.34	0.00	0.22	0.66	0.33	0.34	0.46	0.56	0.56
Avail Cap(c_a), veh/h	958	0		1061	0	903	270	1002	997	257	962	983
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.0	0.0	0.0	13.4	0.0	12.8	14.7	8.9	9.0	16.1	11.2	11.2
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.5	0.0	0.5	4.6	0.3	0.4	7.6	1.2	1.2
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.8	0.0	0.3	0.8	0.6	0.7	0.2	1.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.3	0.0	0.0	13.9	0.0	13.3	19.3	9.3	9.3	23.7	12.4	12.4
LnGrp LOS	B	A		B	A	B	B	A	A	C	B	B
Approach Vol, veh/h		66	A		191			479			497	
Approach Delay, s/veh		13.3			13.8			11.5			12.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.8	16.3		10.4	9.2	14.0		10.4
Change Period (Y+Rc), s	* 6	* 6		* 5.7	* 6	* 6		* 5.7
Max Green Setting (Gmax), s	* 5	* 19		* 19	* 5.3	* 18		* 19
Max Q Clear Time (g_c+I1), s	2.4	4.7		4.6	4.0	6.0		4.4
Green Ext Time (p_c), s	0.0	1.6		0.2	0.0	2.0		0.7

Intersection Summary	
HCM 6th Ctrl Delay	12.5
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	16	165	22	1	162	9	21	7	3	3	10	13
Future Vol, veh/h	16	165	22	1	162	9	21	7	3	3	10	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	72	72	72	86	86	86	61	61	61
Heavy Vehicles, %	0	8	0	0	4	0	6	0	0	0	0	0
Mvmt Flow	21	220	29	1	225	13	24	8	3	5	16	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	238	0	0	249	0	0	529	517	235	516	525	232
Stage 1	-	-	-	-	-	-	277	277	-	234	234	-
Stage 2	-	-	-	-	-	-	252	240	-	282	291	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.16	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.554	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1341	-	-	1328	-	-	454	465	809	473	460	812
Stage 1	-	-	-	-	-	-	721	685	-	774	715	-
Stage 2	-	-	-	-	-	-	743	711	-	729	675	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1341	-	-	1328	-	-	424	456	809	458	451	812
Mov Cap-2 Maneuver	-	-	-	-	-	-	424	456	-	458	451	-
Stage 1	-	-	-	-	-	-	708	673	-	760	714	-
Stage 2	-	-	-	-	-	-	706	710	-	704	663	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	13.7	11.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	452	1341	-	-	1328	-	-	581
HCM Lane V/C Ratio	0.08	0.016	-	-	0.001	-	-	0.073
HCM Control Delay (s)	13.7	7.7	0	-	7.7	0	-	11.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	114	5	5	96	4	5
Future Vol, veh/h	114	5	5	96	4	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	69	69	76	76	50	50
Heavy Vehicles, %	7	0	0	6	0	0
Mvmt Flow	165	7	7	126	8	10

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	172	0	309	169
Stage 1	-	-	-	-	169	-
Stage 2	-	-	-	-	140	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1417	-	687	880
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	892	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1417	-	684	880
Mov Cap-2 Maneuver	-	-	-	-	684	-
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	888	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	781	-	-	1417	-
HCM Lane V/C Ratio	0.023	-	-	0.005	-
HCM Control Delay (s)	9.7	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

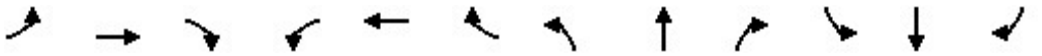
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	13	8	373	434	13
Future Vol, veh/h	2	13	8	373	434	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	91	91	95	95
Heavy Vehicles, %	0	0	0	0	3	0
Mvmt Flow	3	16	9	410	457	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	687	236	471	0	-	0
Stage 1	464	-	-	-	-	-
Stage 2	223	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	385	772	1101	-	-	-
Stage 1	605	-	-	-	-	-
Stage 2	799	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	381	772	1101	-	-	-
Mov Cap-2 Maneuver	381	-	-	-	-	-
Stage 1	598	-	-	-	-	-
Stage 2	799	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.5	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1101	-	679	-	-
HCM Lane V/C Ratio	0.008	-	0.028	-	-
HCM Control Delay (s)	8.3	0	10.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	0	4	55	1	19	11	347	17	10	388	24
Future Volume (veh/h)	28	0	4	55	1	19	11	347	17	10	388	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	907	1900	1900	1900	1900	1885	1900	1900	1856	1604
Adj Flow Rate, veh/h	40	0	6	72	1	25	12	365	18	11	408	25
Peak Hour Factor	0.70	0.70	0.70	0.76	0.76	0.76	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	67	0	0	0	0	1	0	0	3	20
Cap, veh/h	396	13	25	359	2	47	29	851	42	26	822	50
Arrive On Green	0.12	0.00	0.12	0.12	0.12	0.12	0.02	0.24	0.24	0.01	0.24	0.24
Sat Flow, veh/h	1295	111	211	1135	16	394	1810	3475	171	1810	3375	206
Grp Volume(v), veh/h	46	0	0	98	0	0	12	188	195	11	212	221
Grp Sat Flow(s),veh/h/ln	1617	0	0	1544	0	0	1810	1791	1854	1810	1763	1818
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.0	0.0	0.2	2.5	2.5	0.2	2.9	2.9
Cycle Q Clear(g_c), s	0.6	0.0	0.0	1.6	0.0	0.0	0.2	2.5	2.5	0.2	2.9	2.9
Prop In Lane	0.87		0.13	0.73		0.26	1.00		0.09	1.00		0.11
Lane Grp Cap(c), veh/h	434	0	0	408	0	0	29	439	454	26	430	443
V/C Ratio(X)	0.11	0.00	0.00	0.24	0.00	0.00	0.42	0.43	0.43	0.42	0.49	0.50
Avail Cap(c_a), veh/h	1190	0	0	1189	0	0	342	1219	1263	342	1200	1238
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.1	0.0	0.0	11.5	0.0	0.0	13.7	8.9	8.9	13.7	9.1	9.1
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.3	0.0	0.0	9.3	0.7	0.6	10.0	0.9	0.9
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	0.4	0.0	0.0	0.1	0.6	0.6	0.1	0.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.2	0.0	0.0	11.8	0.0	0.0	23.0	9.6	9.6	23.7	10.0	10.0
LnGrp LOS	B	A	A	B	A	A	C	A	A	C	B	A
Approach Vol, veh/h		46			98			395			444	
Approach Delay, s/veh		11.2			11.8			10.0			10.3	
Approach LOS		B			B			A			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	12.6		9.4	6.1	12.5		9.4				
Change Period (Y+Rc), s	* 5.7	* 5.7		6.0	* 5.7	* 5.7		6.0				
Max Green Setting (Gmax), s	* 5.3	* 19		18.2	* 5.3	* 19		18.2				
Max Q Clear Time (g_c+I1), s	2.2	4.5		2.6	2.2	4.9		3.6				
Green Ext Time (p_c), s	0.0	1.7		0.1	0.0	1.9		0.4				

Intersection Summary		
HCM 6th Ctrl Delay		10.4
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	8.4

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	165	2	131	0	287	42	138	225	0
Future Vol, veh/h	0	0	0	165	2	131	0	287	42	138	225	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	-	-	-	265	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	87	87	87	98	98	98	87	87	87
Heavy Vehicles, %	2	2	2	2	50	9	0	2	10	6	1	0
Mvmt Flow	0	0	0	190	2	151	0	293	43	159	259	0

Major/Minor	Minor2		Major1			Major2			
Conflicting Flow All	724	913	130	-	0	0	336	0	0
Stage 1	577	577	-	-	-	-	-	-	-
Stage 2	147	336	-	-	-	-	-	-	-
Critical Hdwy	6.84	7.5	7.08	-	-	-	4.22	-	-
Critical Hdwy Stg 1	5.84	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.5	3.39	-	-	-	2.26	-	-
Pot Cap-1 Maneuver	361	200	874	0	-	-	1192	-	0
Stage 1	525	396	-	0	-	-	-	-	0
Stage 2	865	534	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	313	0	874	-	-	-	1192	-	-
Mov Cap-2 Maneuver	313	0	-	-	-	-	-	-	-
Stage 1	525	0	-	-	-	-	-	-	-
Stage 2	750	0	-	-	-	-	-	-	-

Approach	SB	NE	SW
HCM Control Delay, s	22.9	0	3.2
HCM LOS	C		

Minor Lane/Major Mvmt	NET	NER	SBLn1	SBLn2	SWL	SWT
Capacity (veh/h)	-	-	313	874	1192	-
HCM Lane V/C Ratio	-	-	0.613	0.172	0.133	-
HCM Control Delay (s)	-	-	33.1	10	8.5	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	3.8	0.6	0.5	-

Intersection	
Int Delay, s/veh	2

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	5	1	119	95	357	0	0	358	149
Future Vol, veh/h	0	0	0	5	1	119	95	357	0	0	358	149
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	130	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	90	90	90	95	95	95	88	88	88
Heavy Vehicles, %	2	2	2	0	0	4	1	3	0	0	3	4
Mvmt Flow	0	0	0	6	1	132	100	376	0	0	407	169

Major/Minor	Minor1		Major1		Major2				
Conflicting Flow All	780	1152	188	576	0	-	-	-	0
Stage 1	576	576	-	-	-	-	-	-	-
Stage 2	204	576	-	-	-	-	-	-	-
Critical Hdwy	6.8	6.5	6.98	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.8	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.8	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.34	2.21	-	-	-	-	-
Pot Cap-1 Maneuver	336	199	816	1000	-	0	0	-	-
Stage 1	531	505	-	-	-	0	0	-	-
Stage 2	816	505	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	302	0	816	1000	-	-	-	-	-
Mov Cap-2 Maneuver	302	0	-	-	-	-	-	-	-
Stage 1	478	0	-	-	-	-	-	-	-
Stage 2	816	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	10.6	1.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NWLn1	NWLn2	SWT	SWR
Capacity (veh/h)	1000	-	302	816	-	-
HCM Lane V/C Ratio	0.1	-	0.022	0.162	-	-
HCM Control Delay (s)	9	-	17.2	10.3	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.1	0.6	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	61	28	26	65	17	146	48	234	79	156	372	28
Future Volume (veh/h)	61	28	26	65	17	146	48	234	79	156	372	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1900	1885	1900	1856	1870	1900	1870	1900
Adj Flow Rate, veh/h	68	31	29	76	20	0	54	263	89	177	423	32
Peak Hour Factor	0.90	0.90	0.90	0.85	0.85	0.85	0.89	0.89	0.89	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	2	0	1	0	3	2	0	2	0
Cap, veh/h	272	61	49	356	54		165	513	170	232	786	59
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.00	0.09	0.20	0.20	0.13	0.23	0.23
Sat Flow, veh/h	816	468	376	1236	413	1598	1810	2603	861	1810	3349	252
Grp Volume(v), veh/h	128	0	0	96	0	0	54	176	176	177	224	231
Grp Sat Flow(s),veh/h/ln	1660	0	0	1649	0	1598	1810	1763	1701	1810	1777	1825
Q Serve(g_s), s	0.7	0.0	0.0	0.0	0.0	0.0	0.9	3.0	3.1	3.1	3.7	3.7
Cycle Q Clear(g_c), s	2.3	0.0	0.0	1.6	0.0	0.0	0.9	3.0	3.1	3.1	3.7	3.7
Prop In Lane	0.53		0.23	0.79		1.00	1.00		0.51	1.00		0.14
Lane Grp Cap(c), veh/h	383	0	0	410	0		165	348	335	232	417	428
V/C Ratio(X)	0.33	0.00	0.00	0.23	0.00		0.33	0.51	0.52	0.76	0.54	0.54
Avail Cap(c_a), veh/h	1107	0	0	1055	0		331	968	934	510	1152	1183
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.5	0.0	0.0	13.3	0.0	0.0	14.2	11.9	12.0	14.0	11.2	11.2
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.3	0.0	0.0	1.1	1.1	1.3	5.1	1.1	1.1
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	0.4	0.0	0.0	0.3	0.9	0.9	1.2	1.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.0	0.0	0.0	13.6	0.0	0.0	15.3	13.1	13.2	19.1	12.2	12.2
LnGrp LOS	B	A	A	B	A		B	B	B	B	B	B
Approach Vol, veh/h		128			96	A		406			632	
Approach Delay, s/veh		14.0			13.6			13.5			14.2	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.2	12.5		10.7	8.9	13.7		10.7				
Change Period (Y+Rc), s	* 5.9	* 5.9		* 6.3	* 5.9	* 5.9		* 6.3				
Max Green Setting (Gmax), s	* 9.4	* 18		* 20	* 6.1	* 22		* 19				
Max Q Clear Time (g_c+I1), s	5.1	5.1		4.3	2.9	5.7		3.6				
Green Ext Time (p_c), s	0.2	1.5		0.5	0.0	2.1		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			13.9									
HCM 6th LOS			B									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	18	124	96	27	19	121	379	74	23	417	54
Future Volume (veh/h)	29	18	124	96	27	19	121	379	74	23	417	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1870	1870	1900	1885	1900
Adj Flow Rate, veh/h	31	19	0	112	31	22	144	451	88	24	444	57
Peak Hour Factor	0.95	0.95	0.95	0.86	0.86	0.86	0.84	0.84	0.84	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	0	0	0	1	2	2	0	1	0
Cap, veh/h	225	90		361	48	211	195	957	186	54	778	99
Arrive On Green	0.13	0.13	0.00	0.13	0.13	0.13	0.11	0.32	0.32	0.03	0.24	0.24
Sat Flow, veh/h	417	686	0	1322	366	1610	1795	2968	575	1810	3195	408
Grp Volume(v), veh/h	50	0	0	143	0	22	144	269	270	24	248	253
Grp Sat Flow(s),veh/h/ln	1104	0	0	1687	0	1610	1795	1777	1767	1810	1791	1812
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	0.4	2.7	4.1	4.2	0.4	4.2	4.2
Cycle Q Clear(g_c), s	2.6	0.0	0.0	2.5	0.0	0.4	2.7	4.1	4.2	0.4	4.2	4.2
Prop In Lane	0.62		0.00	0.78		1.00	1.00		0.33	1.00		0.23
Lane Grp Cap(c), veh/h	315	0		409	0	211	195	573	570	54	436	441
V/C Ratio(X)	0.16	0.00		0.35	0.00	0.10	0.74	0.47	0.47	0.45	0.57	0.57
Avail Cap(c_a), veh/h	951	0		1034	0	883	262	964	959	264	972	983
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.3	0.0	0.0	14.0	0.0	13.1	14.8	9.3	9.3	16.4	11.4	11.4
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.5	0.0	0.2	7.2	0.6	0.6	5.7	1.2	1.2
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.9	0.0	0.1	1.2	1.0	1.0	0.2	1.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.6	0.0	0.0	14.5	0.0	13.3	22.0	9.9	9.9	22.0	12.6	12.6
LnGrp LOS	B	A		B	A	B	C	A	A	C	B	B
Approach Vol, veh/h		50	A		165			683			525	
Approach Delay, s/veh		13.6			14.4			12.4			13.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.0	17.1		10.2	9.7	14.3		10.2
Change Period (Y+Rc), s	* 6	* 6		* 5.7	* 6	* 6		* 5.7
Max Green Setting (Gmax), s	* 5	* 19		* 19	* 5	* 19		* 19
Max Q Clear Time (g_c+I1), s	2.4	6.2		4.6	4.7	6.2		4.5
Green Ext Time (p_c), s	0.0	2.3		0.1	0.0	2.1		0.6

Intersection Summary	
HCM 6th Ctrl Delay	12.9
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	21	125	21	3	175	24	32	15	7	12	17	17
Future Vol, veh/h	21	125	21	3	175	24	32	15	7	12	17	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	78	78	78	73	73	73	67	67	67
Heavy Vehicles, %	0	2	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	27	158	27	4	224	31	44	21	10	18	25	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	255	0	0	185	0	0	499	489	172	489	487	240
Stage 1	-	-	-	-	-	-	226	226	-	248	248	-
Stage 2	-	-	-	-	-	-	273	263	-	241	239	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1322	-	-	1402	-	-	485	482	877	493	484	804
Stage 1	-	-	-	-	-	-	781	721	-	760	705	-
Stage 2	-	-	-	-	-	-	737	694	-	767	711	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1322	-	-	1402	-	-	441	469	877	462	471	804
Mov Cap-2 Maneuver	-	-	-	-	-	-	441	469	-	462	471	-
Stage 1	-	-	-	-	-	-	763	704	-	743	703	-
Stage 2	-	-	-	-	-	-	686	692	-	720	695	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.1	13.9	12.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	480	1322	-	-	1402	-	-	553
HCM Lane V/C Ratio	0.154	0.02	-	-	0.003	-	-	0.124
HCM Control Delay (s)	13.9	7.8	0	-	7.6	0	-	12.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0	-	-	0.4

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	98	2	4	119	1	6
Future Vol, veh/h	98	2	4	119	1	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	77	77	50	50
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	126	3	5	155	2	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	129	0	293	128
Stage 1	-	-	-	-	128	-
Stage 2	-	-	-	-	165	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1469	-	702	927
Stage 1	-	-	-	-	903	-
Stage 2	-	-	-	-	869	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1469	-	699	927
Mov Cap-2 Maneuver	-	-	-	-	699	-
Stage 1	-	-	-	-	903	-
Stage 2	-	-	-	-	866	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	886	-	-	1469	-
HCM Lane V/C Ratio	0.016	-	-	0.004	-
HCM Control Delay (s)	9.1	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

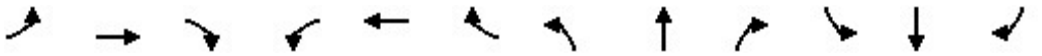
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	38	35	392	456	8
Future Vol, veh/h	5	38	35	392	456	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	85	85	88	88
Heavy Vehicles, %	0	0	0	2	2	0
Mvmt Flow	7	51	41	461	518	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	836	264	527	0	-	0
Stage 1	523	-	-	-	-	-
Stage 2	313	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	310	741	1050	-	-	-
Stage 1	565	-	-	-	-	-
Stage 2	721	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	294	741	1050	-	-	-
Mov Cap-2 Maneuver	294	-	-	-	-	-
Stage 1	536	-	-	-	-	-
Stage 2	721	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.3	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1050	-	630	-	-
HCM Lane V/C Ratio	0.039	-	0.091	-	-
HCM Control Delay (s)	8.6	0.2	11.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	9	32	73	7	30	17	323	57	31	359	27
Future Volume (veh/h)	32	9	32	73	7	30	17	323	57	31	359	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1796	1900	1900	1737	1900	1870	1900	1900	1870	1900
Adj Flow Rate, veh/h	52	15	52	97	9	40	19	367	65	37	427	32
Peak Hour Factor	0.61	0.61	0.61	0.75	0.75	0.75	0.88	0.88	0.88	0.84	0.84	0.84
Percent Heavy Veh, %	0	0	7	0	0	11	0	2	0	0	2	0
Cap, veh/h	262	48	109	350	18	65	44	711	125	80	855	64
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.02	0.24	0.24	0.04	0.26	0.26
Sat Flow, veh/h	621	329	738	1040	124	439	1810	3022	530	1810	3352	250
Grp Volume(v), veh/h	119	0	0	146	0	0	19	214	218	37	226	233
Grp Sat Flow(s),veh/h/ln	1688	0	0	1603	0	0	1810	1777	1775	1810	1777	1825
Q Serve(g_s), s	0.0	0.0	0.0	0.6	0.0	0.0	0.3	3.2	3.2	0.6	3.3	3.3
Cycle Q Clear(g_c), s	1.8	0.0	0.0	2.4	0.0	0.0	0.3	3.2	3.2	0.6	3.3	3.3
Prop In Lane	0.44		0.44	0.66		0.27	1.00		0.30	1.00		0.14
Lane Grp Cap(c), veh/h	419	0	0	433	0	0	44	418	418	80	453	466
V/C Ratio(X)	0.28	0.00	0.00	0.34	0.00	0.00	0.43	0.51	0.52	0.46	0.50	0.50
Avail Cap(c_a), veh/h	1110	0	0	1087	0	0	298	1113	1111	322	1136	1167
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.8	0.0	0.0	12.0	0.0	0.0	14.6	10.1	10.1	14.2	9.6	9.7
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.5	0.0	0.0	6.5	1.0	1.0	4.1	0.8	0.8
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	0.7	0.0	0.0	0.2	0.8	0.8	0.3	0.8	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.2	0.0	0.0	12.5	0.0	0.0	21.1	11.1	11.1	18.3	10.5	10.5
LnGrp LOS	B	A	A	B	A	A	C	B	B	B	B	B
Approach Vol, veh/h		119			146			451			496	
Approach Delay, s/veh		12.2			12.5			11.5			11.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	12.8		10.5	6.4	13.4		10.5				
Change Period (Y+Rc), s	* 5.7	* 5.7		6.0	* 5.7	* 5.7		6.0				
Max Green Setting (Gmax), s	* 5.4	* 19		18.2	* 5	* 19		18.2				
Max Q Clear Time (g_c+I1), s	2.6	5.2		3.8	2.3	5.3		4.4				
Green Ext Time (p_c), s	0.0	1.9		0.5	0.0	2.0		0.6				

Intersection Summary		
HCM 6th Ctrl Delay		11.5
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	16.4

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	171	0	170	0	407	25	182	272	0
Future Vol, veh/h	0	0	0	171	0	170	0	407	25	182	272	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	-	-	-	265	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	17	0	8	0	4	31	12	8	0
Mvmt Flow	0	0	0	180	0	179	0	452	28	202	302	0

Major/Minor	Minor2		Major1			Major2			
Conflicting Flow All	932	1186	151	-	0	0	480	0	0
Stage 1	706	706	-	-	-	-	-	-	-
Stage 2	226	480	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.5	7.06	-	-	-	4.34	-	-
Critical Hdwy Stg 1	6.14	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4	3.38	-	-	-	2.32	-	-
Pot Cap-1 Maneuver	239	190	850	0	-	-	1011	-	0
Stage 1	413	442	-	0	-	-	-	-	0
Stage 2	747	558	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	191	0	850	-	-	-	1011	-	-
Mov Cap-2 Maneuver	191	0	-	-	-	-	-	-	-
Stage 1	413	0	-	-	-	-	-	-	-
Stage 2	598	0	-	-	-	-	-	-	-

Approach	SB	NE	SW
HCM Control Delay, s	55.9	0	3.8
HCM LOS	F		

Minor Lane/Major Mvmt	NET	NER	SBLn1	SBLn2	SWL	SWT
Capacity (veh/h)	-	-	191	850	1011	-
HCM Lane V/C Ratio	-	-	0.942	0.211	0.2	-
HCM Control Delay (s)	-	-	101.2	10.4	9.4	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	7.6	0.8	0.7	-

Intersection	
Int Delay, s/veh	2.9

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	8	0	199	157	421	0	0	446	248
Future Vol, veh/h	0	0	0	8	0	199	157	421	0	0	446	248
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	130	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	67	0	14	6	7	0	0	8	7
Mvmt Flow	0	0	0	8	0	209	174	468	0	0	496	276

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	1064	1588	234	772	0	-	-	-	0
Stage 1	816	816	-	-	-	-	-	-	-
Stage 2	248	772	-	-	-	-	-	-	-
Critical Hdwy	8.14	6.5	7.18	4.22	-	-	-	-	-
Critical Hdwy Stg 1	7.14	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.14	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.17	4	3.44	2.26	-	-	-	-	-
Pot Cap-1 Maneuver	135	109	732	813	-	0	0	-	-
Stage 1	265	393	-	-	-	0	0	-	-
Stage 2	607	412	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	106	0	732	813	-	-	-	-	-
Mov Cap-2 Maneuver	106	0	-	-	-	-	-	-	-
Stage 1	208	0	-	-	-	-	-	-	-
Stage 2	607	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	13.1	2.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NWLn1	NWLn2	SWT	SWR
Capacity (veh/h)	813	-	106	732	-	-
HCM Lane V/C Ratio	0.215	-	0.079	0.286	-	-
HCM Control Delay (s)	10.6	-	41.9	11.9	-	-
HCM Lane LOS	B	-	E	B	-	-
HCM 95th %tile Q(veh)	0.8	-	0.3	1.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	66	21	35	92	78	198	41	450	66	231	570	96
Future Volume (veh/h)	66	21	35	92	78	198	41	450	66	231	570	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1781	1263	1826	1900	1900	1574	1767	1796	1841	1781	1900
Adj Flow Rate, veh/h	78	25	41	102	87	0	46	500	73	257	633	107
Peak Hour Factor	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	8	43	5	0	0	22	9	7	4	8	0
Cap, veh/h	240	64	71	258	133		73	752	109	319	1127	190
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.00	0.05	0.26	0.26	0.18	0.39	0.39
Sat Flow, veh/h	736	411	456	854	853	1610	1499	2940	428	1753	2897	489
Grp Volume(v), veh/h	144	0	0	189	0	0	46	284	289	257	369	371
Grp Sat Flow(s),veh/h/ln	1603	0	0	1707	0	1610	1499	1678	1690	1753	1692	1693
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.0	0.0	1.3	6.8	6.8	6.3	7.6	7.6
Cycle Q Clear(g_c), s	3.4	0.0	0.0	4.4	0.0	0.0	1.3	6.8	6.8	6.3	7.6	7.6
Prop In Lane	0.54		0.28	0.54		1.00	1.00		0.25	1.00		0.29
Lane Grp Cap(c), veh/h	375	0	0	391	0		73	429	432	319	658	659
V/C Ratio(X)	0.38	0.00	0.00	0.48	0.00		0.63	0.66	0.67	0.81	0.56	0.56
Avail Cap(c_a), veh/h	778	0	0	820	0		239	813	819	436	972	972
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.3	0.0	0.0	17.7	0.0	0.0	20.8	14.9	14.9	17.5	10.6	10.7
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.9	0.0	0.0	8.6	1.8	1.8	7.6	0.8	0.8
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	1.5	0.0	0.0	0.6	2.1	2.2	2.7	2.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.0	0.0	0.0	18.6	0.0	0.0	29.4	16.6	16.7	25.1	11.4	11.4
LnGrp LOS	B	A	A	B	A		C	B	B	C	B	B
Approach Vol, veh/h		144			189	A		619			997	
Approach Delay, s/veh		18.0			18.6			17.6			14.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	17.3		13.3	8.1	23.2		13.3				
Change Period (Y+Rc), s	* 5.9	* 5.9		* 6.3	* 5.9	* 5.9		* 6.3				
Max Green Setting (Gmax), s	* 11	* 22		* 20	* 7.1	* 26		* 19				
Max Q Clear Time (g_c+I1), s	8.3	8.8		5.4	3.3	9.6		6.4				
Green Ext Time (p_c), s	0.2	2.6		0.6	0.0	3.8		0.6				

Intersection Summary	
HCM 6th Ctrl Delay	16.4
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	28	215	111	44	54	158	459	89	26	590	56
Future Volume (veh/h)	59	28	215	111	44	54	158	459	89	26	590	56
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1796	1900	1900	1796	1900	1796	1811	1856	1900
Adj Flow Rate, veh/h	66	31	0	123	49	60	176	510	99	29	656	62
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	7	0	0	7	0	7	6	3	0
Cap, veh/h	226	81		342	95	285	201	1126	218	59	944	89
Arrive On Green	0.18	0.18	0.00	0.18	0.18	0.18	0.12	0.37	0.37	0.03	0.29	0.29
Sat Flow, veh/h	474	456	0	1114	538	1610	1711	3017	583	1725	3256	307
Grp Volume(v), veh/h	97	0	0	172	0	60	176	304	305	29	355	363
Grp Sat Flow(s),veh/h/ln	930	0	0	1653	0	1610	1711	1805	1795	1725	1763	1800
Q Serve(g_s), s	1.5	0.0	0.0	0.0	0.0	1.4	4.3	5.4	5.5	0.7	7.6	7.6
Cycle Q Clear(g_c), s	5.4	0.0	0.0	3.9	0.0	1.4	4.3	5.4	5.5	0.7	7.6	7.6
Prop In Lane	0.68		0.00	0.72		1.00	1.00		0.32	1.00		0.17
Lane Grp Cap(c), veh/h	307	0		437	0	285	201	674	670	59	511	522
V/C Ratio(X)	0.32	0.00		0.39	0.00	0.21	0.88	0.45	0.45	0.49	0.69	0.70
Avail Cap(c_a), veh/h	687	0		838	0	711	201	789	784	203	770	787
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	0.0	0.0	16.0	0.0	15.0	18.5	10.1	10.1	20.2	13.4	13.4
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.6	0.0	0.4	32.2	0.5	0.5	6.3	1.7	1.7
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	1.4	0.0	0.5	3.1	1.5	1.5	0.3	2.4	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.3	0.0	0.0	16.6	0.0	15.3	50.7	10.5	10.6	26.5	15.1	15.1
LnGrp LOS	B	A		B	A	B	D	B	B	C	B	B
Approach Vol, veh/h		97	A		232			785			747	
Approach Delay, s/veh		17.3			16.3			19.5			15.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.5	21.9		13.2	11.0	18.3		13.2
Change Period (Y+Rc), s	* 6	* 6		* 5.7	* 6	* 6		* 5.7
Max Green Setting (Gmax), s	* 5	* 19		* 19	* 5	* 19		* 19
Max Q Clear Time (g_c+I1), s	2.7	7.5		7.4	6.3	9.6		5.9
Green Ext Time (p_c), s	0.0	2.6		0.3	0.0	2.7		0.9

Intersection Summary	
HCM 6th Ctrl Delay	17.4
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	24	292	33	2	242	14	32	11	5	5	15	20
Future Vol, veh/h	24	292	33	2	242	14	32	11	5	5	15	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	85	85	85	85	85	85
Heavy Vehicles, %	0	8	0	0	4	0	6	0	0	0	0	0
Mvmt Flow	27	324	37	2	269	16	38	13	6	6	18	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	285	0	0	361	0	0	699	686	343	687	696	277
Stage 1	-	-	-	-	-	-	397	397	-	281	281	-
Stage 2	-	-	-	-	-	-	302	289	-	406	415	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.16	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.554	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1289	-	-	1209	-	-	349	373	704	364	368	767
Stage 1	-	-	-	-	-	-	621	607	-	730	682	-
Stage 2	-	-	-	-	-	-	699	677	-	626	596	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1289	-	-	1209	-	-	319	363	704	344	358	767
Mov Cap-2 Maneuver	-	-	-	-	-	-	319	363	-	344	358	-
Stage 1	-	-	-	-	-	-	605	591	-	711	681	-
Stage 2	-	-	-	-	-	-	659	676	-	591	581	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	17.3	13.2
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	349	1289	-	-	1209	-	-	485
HCM Lane V/C Ratio	0.162	0.021	-	-	0.002	-	-	0.097
HCM Control Delay (s)	17.3	7.9	0	-	8	0	-	13.2
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	171	8	8	144	6	8
Future Vol, veh/h	171	8	8	144	6	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	85	85
Heavy Vehicles, %	7	0	0	6	0	0
Mvmt Flow	190	9	9	160	7	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	199	0	373	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	178	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1385	-	632	851
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	858	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1385	-	628	851
Mov Cap-2 Maneuver	-	-	-	-	628	-
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	852	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	739	-	-	1385	-
HCM Lane V/C Ratio	0.022	-	-	0.006	-
HCM Control Delay (s)	10	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

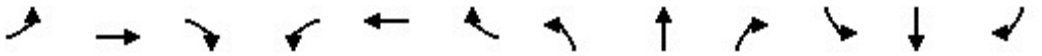
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	21	12	560	651	20
Future Vol, veh/h	3	21	12	560	651	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	90	90	90	90
Heavy Vehicles, %	0	0	0	0	3	0
Mvmt Flow	4	25	13	622	723	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1071	373	745	0	-	0
Stage 1	734	-	-	-	-	-
Stage 2	337	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	219	630	872	-	-	-
Stage 1	441	-	-	-	-	-
Stage 2	701	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	214	630	872	-	-	-
Mov Cap-2 Maneuver	214	-	-	-	-	-
Stage 1	431	-	-	-	-	-
Stage 2	701	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.5	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	872	-	507	-	-
HCM Lane V/C Ratio	0.015	-	0.056	-	-
HCM Control Delay (s)	9.2	0.1	12.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	0	6	83	2	29	17	520	26	15	582	36
Future Volume (veh/h)	42	0	6	83	2	29	17	520	26	15	582	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	907	1900	1900	1900	1900	1885	1900	1900	1856	1604
Adj Flow Rate, veh/h	49	0	7	98	2	34	19	578	29	17	647	40
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	67	0	0	0	0	1	0	0	3	20
Cap, veh/h	377	14	26	334	3	50	44	1107	55	40	1068	66
Arrive On Green	0.13	0.00	0.13	0.13	0.13	0.13	0.02	0.32	0.32	0.02	0.32	0.32
Sat Flow, veh/h	1355	112	209	1138	23	395	1810	3471	174	1810	3372	208
Grp Volume(v), veh/h	56	0	0	134	0	0	19	298	309	17	338	349
Grp Sat Flow(s),veh/h/ln	1676	0	0	1556	0	0	1810	1791	1854	1810	1763	1818
Q Serve(g_s), s	0.0	0.0	0.0	1.7	0.0	0.0	0.3	4.4	4.4	0.3	5.3	5.3
Cycle Q Clear(g_c), s	0.9	0.0	0.0	2.6	0.0	0.0	0.3	4.4	4.4	0.3	5.3	5.3
Prop In Lane	0.87		0.12	0.73		0.25	1.00		0.09	1.00		0.11
Lane Grp Cap(c), veh/h	418	0	0	387	0	0	44	571	591	40	558	575
V/C Ratio(X)	0.13	0.00	0.00	0.35	0.00	0.00	0.43	0.52	0.52	0.43	0.61	0.61
Avail Cap(c_a), veh/h	1030	0	0	1025	0	0	277	1065	1102	277	1048	1081
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.9	0.0	0.0	13.5	0.0	0.0	15.7	9.1	9.1	15.8	9.4	9.4
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.5	0.0	0.0	6.6	0.7	0.7	7.2	1.1	1.0
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.8	0.0	0.0	0.2	1.0	1.1	0.2	1.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.0	0.0	0.0	14.1	0.0	0.0	22.3	9.8	9.8	22.9	10.5	10.5
LnGrp LOS	B	A	A	B	A	A	C	A	A	C	B	B
Approach Vol, veh/h		56			134			626			704	
Approach Delay, s/veh		13.0			14.1			10.2			10.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	16.1		10.1	6.5	16.0		10.1				
Change Period (Y+Rc), s	* 5.7	* 5.7		6.0	* 5.7	* 5.7		6.0				
Max Green Setting (Gmax), s	* 5	* 19		18.2	* 5	* 19		18.2				
Max Q Clear Time (g_c+I1), s	2.3	6.4		2.9	2.3	7.3		4.6				
Green Ext Time (p_c), s	0.0	2.7		0.2	0.0	3.0		0.5				

Intersection Summary	
HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	34.9

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	228	3	180	0	396	58	190	311	0
Future Vol, veh/h	0	0	0	228	3	180	0	396	58	190	311	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	-	-	-	265	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	50	9	0	2	10	6	1	0
Mvmt Flow	0	0	0	240	3	189	0	440	64	211	346	0

Major/Minor	Minor2		Major1			Major2			
Conflicting Flow All	988	1272	173	-	0	0	504	0	0
Stage 1	768	768	-	-	-	-	-	-	-
Stage 2	220	504	-	-	-	-	-	-	-
Critical Hdwy	6.84	7.5	7.08	-	-	-	4.22	-	-
Critical Hdwy Stg 1	5.84	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.5	3.39	-	-	-	2.26	-	-
Pot Cap-1 Maneuver	244	113	819	0	-	-	1029	-	0
Stage 1	418	311	-	0	-	-	-	-	0
Stage 2	795	434	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	~ 194	0	819	-	-	-	1029	-	-
Mov Cap-2 Maneuver	~ 194	0	-	-	-	-	-	-	-
Stage 1	418	0	-	-	-	-	-	-	-
Stage 2	632	0	-	-	-	-	-	-	-

Approach	SB	NE	SW
HCM Control Delay, s	115.8	0	3.6
HCM LOS	F		

Minor Lane/Major Mvmt	NET	NER	SBLn1	SBLn2	SWL	SWT
Capacity (veh/h)	-	-	194	819	1029	-
HCM Lane V/C Ratio	-	-	1.253	0.231	0.205	-
HCM Control Delay (s)	-	-	197.7	10.7	9.4	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	13.1	0.9	0.8	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.2

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	7	1	165	131	493	0	0	494	206
Future Vol, veh/h	0	0	0	7	1	165	131	493	0	0	494	206
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	130	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	0	0	4	1	3	0	0	3	4
Mvmt Flow	0	0	0	7	1	174	146	548	0	0	549	229

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	1115	1618	274	778	0	-	-	-	0
Stage 1	840	840	-	-	-	-	-	-	-
Stage 2	275	778	-	-	-	-	-	-	-
Critical Hdwy	6.8	6.5	6.98	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.8	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.8	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.34	2.21	-	-	-	-	-
Pot Cap-1 Maneuver	205	104	718	841	-	0	0	-	-
Stage 1	389	384	-	-	-	0	0	-	-
Stage 2	753	410	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	169	0	718	841	-	-	-	-	-
Mov Cap-2 Maneuver	169	0	-	-	-	-	-	-	-
Stage 1	321	0	-	-	-	-	-	-	-
Stage 2	753	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	12.3	2.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NWLn1	NWLn2	SWT	SWR
Capacity (veh/h)	841	-	169	718	-	-
HCM Lane V/C Ratio	0.173	-	0.05	0.242	-	-
HCM Control Delay (s)	10.2	-	27.4	11.6	-	-
HCM Lane LOS	B	-	D	B	-	-
HCM 95th %tile Q(veh)	0.6	-	0.2	0.9	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	92	42	39	98	26	219	72	351	119	234	558	42
Future Volume (veh/h)	92	42	39	98	26	219	72	351	119	234	558	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1900	1885	1900	1856	1870	1900	1870	1900
Adj Flow Rate, veh/h	108	49	46	109	29	0	80	390	132	260	620	47
Peak Hour Factor	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	2	0	1	0	3	2	0	2	0
Cap, veh/h	264	86	65	354	78		242	601	201	323	925	70
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.00	0.13	0.23	0.23	0.18	0.28	0.28
Sat Flow, veh/h	793	495	378	1186	450	1598	1810	2595	867	1810	3348	253
Grp Volume(v), veh/h	203	0	0	138	0	0	80	263	259	260	329	338
Grp Sat Flow(s),veh/h/ln	1666	0	0	1636	0	1598	1810	1763	1699	1810	1777	1825
Q Serve(g_s), s	1.7	0.0	0.0	0.0	0.0	0.0	1.7	5.9	6.0	6.0	7.1	7.2
Cycle Q Clear(g_c), s	4.8	0.0	0.0	3.0	0.0	0.0	1.7	5.9	6.0	6.0	7.1	7.2
Prop In Lane	0.53		0.23	0.79		1.00	1.00		0.51	1.00		0.14
Lane Grp Cap(c), veh/h	415	0	0	432	0		242	409	394	323	491	504
V/C Ratio(X)	0.49	0.00	0.00	0.32	0.00		0.33	0.64	0.66	0.81	0.67	0.67
Avail Cap(c_a), veh/h	856	0	0	811	0		296	743	716	392	843	866
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	0.0	0.0	16.1	0.0	0.0	17.0	15.1	15.1	17.1	14.0	14.0
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.4	0.0	0.0	0.8	1.7	1.9	9.8	1.6	1.6
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0	0.9	0.0	0.0	0.6	2.0	1.9	2.8	2.3	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.6	0.0	0.0	16.5	0.0	0.0	17.8	16.8	17.0	26.9	15.5	15.5
LnGrp LOS	B	A	A	B	A		B	B	B	C	B	B
Approach Vol, veh/h		203			138	A		602			927	
Approach Delay, s/veh		17.6			16.5			17.0			18.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.6	16.0		13.8	11.7	17.9		13.8				
Change Period (Y+Rc), s	* 5.9	* 5.9		* 6.3	* 5.9	* 5.9		* 6.3				
Max Green Setting (Gmax), s	* 9.4	* 18		* 20	* 7.1	* 21		* 19				
Max Q Clear Time (g_c+I1), s	8.0	8.0		6.8	3.7	9.2		5.0				
Green Ext Time (p_c), s	0.1	2.1		0.9	0.0	2.8		0.5				

Intersection Summary		
HCM 6th Ctrl Delay		17.9
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	27	186	144	40	29	182	569	111	35	626	81
Future Volume (veh/h)	44	27	186	144	40	29	182	569	111	35	626	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1870	1870	1900	1885	1900
Adj Flow Rate, veh/h	49	30	0	160	44	32	202	632	123	39	696	90
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	1	2	2	0	1	0
Cap, veh/h	180	83		356	61	307	257	1171	227	77	937	121
Arrive On Green	0.19	0.19	0.00	0.19	0.19	0.19	0.14	0.39	0.39	0.04	0.29	0.29
Sat Flow, veh/h	299	436	0	1157	320	1610	1795	2967	576	1810	3190	412
Grp Volume(v), veh/h	79	0	0	204	0	32	202	378	377	39	391	395
Grp Sat Flow(s),veh/h/ln	736	0	0	1477	0	1610	1795	1777	1767	1810	1791	1811
Q Serve(g_s), s	0.9	0.0	0.0	0.0	0.0	0.8	5.2	7.8	7.8	1.0	9.4	9.4
Cycle Q Clear(g_c), s	7.0	0.0	0.0	6.2	0.0	0.8	5.2	7.8	7.8	1.0	9.4	9.4
Prop In Lane	0.62		0.00	0.78		1.00	1.00		0.33	1.00		0.23
Lane Grp Cap(c), veh/h	263	0		417	0	307	257	701	697	77	526	532
V/C Ratio(X)	0.30	0.00		0.49	0.00	0.10	0.79	0.54	0.54	0.51	0.74	0.74
Avail Cap(c_a), veh/h	569	0		721	0	637	378	882	877	190	701	708
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.7	0.0	0.0	18.1	0.0	15.9	19.7	11.1	11.1	22.3	15.2	15.2
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.9	0.0	0.1	6.6	0.6	0.7	5.1	2.9	2.9
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	2.0	0.0	0.3	2.2	2.2	2.2	0.5	3.3	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.3	0.0	0.0	19.0	0.0	16.0	26.2	11.7	11.7	27.4	18.1	18.1
LnGrp LOS	B	A		B	A	B	C	B	B	C	B	B
Approach Vol, veh/h		79	A		236			957			825	
Approach Delay, s/veh		18.3			18.6			14.8			18.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	24.8		14.8	12.8	20.0		14.8
Change Period (Y+Rc), s	* 6	* 6		* 5.7	* 6	* 6		* 5.7
Max Green Setting (Gmax), s	* 5	* 24		* 19	* 10	* 19		* 19
Max Q Clear Time (g_c+I1), s	3.0	9.8		9.0	7.2	11.4		8.2
Green Ext Time (p_c), s	0.0	3.6		0.2	0.1	2.6		0.9

Intersection Summary	
HCM 6th Ctrl Delay	16.8
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	32	228	32	5	292	36	48	23	11	18	26	26
Future Vol, veh/h	32	228	32	5	292	36	48	23	11	18	26	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	85	85	85	85	85	85
Heavy Vehicles, %	0	2	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	36	253	36	6	324	40	56	27	13	21	31	31

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	364	0	0	289	0	0	730	719	271	719	717	344
Stage 1	-	-	-	-	-	-	343	343	-	356	356	-
Stage 2	-	-	-	-	-	-	387	376	-	363	361	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1206	-	-	1284	-	-	340	357	773	346	358	703
Stage 1	-	-	-	-	-	-	676	641	-	666	633	-
Stage 2	-	-	-	-	-	-	641	620	-	660	629	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1206	-	-	1284	-	-	293	342	773	310	343	703
Mov Cap-2 Maneuver	-	-	-	-	-	-	293	342	-	310	343	-
Stage 1	-	-	-	-	-	-	652	618	-	642	629	-
Stage 2	-	-	-	-	-	-	580	616	-	598	606	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.1	20.1	16
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	334	1206	-	-	1284	-	-	410
HCM Lane V/C Ratio	0.289	0.029	-	-	0.004	-	-	0.201
HCM Control Delay (s)	20.1	8.1	0	-	7.8	0	-	16
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.2	0.1	-	-	0	-	-	0.7

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	147	3	6	179	0	9
Future Vol, veh/h	147	3	6	179	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	85	85
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	163	3	7	199	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	166	0	378	165
Stage 1	-	-	-	-	165	-
Stage 2	-	-	-	-	213	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1424	-	628	885
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	827	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1424	-	624	885
Mov Cap-2 Maneuver	-	-	-	-	624	-
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	822	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	885	-	-	1424	-
HCM Lane V/C Ratio	0.012	-	-	0.005	-
HCM Control Delay (s)	9.1	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

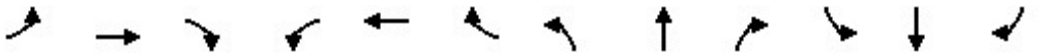
Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	58	54	588	684	12
Future Vol, veh/h	8	58	54	588	684	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	90	90	90	90
Heavy Vehicles, %	0	0	0	2	2	0
Mvmt Flow	9	68	60	653	760	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1214	387	773	0	-	0
Stage 1	767	-	-	-	-	-
Stage 2	447	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	177	617	851	-	-	-
Stage 1	424	-	-	-	-	-
Stage 2	617	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	157	617	851	-	-	-
Mov Cap-2 Maneuver	157	-	-	-	-	-
Stage 1	377	-	-	-	-	-
Stage 2	617	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.5	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	851	-	455	-	-
HCM Lane V/C Ratio	0.071	-	0.171	-	-
HCM Control Delay (s)	9.6	0.4	14.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	14	48	110	11	45	26	485	85	47	538	41
Future Volume (veh/h)	48	14	48	110	11	45	26	485	85	47	538	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1796	1900	1900	1737	1900	1870	1900	1900	1870	1900
Adj Flow Rate, veh/h	56	16	56	129	13	53	29	539	94	52	598	46
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	7	0	0	11	0	2	0	0	2	0
Cap, veh/h	244	61	123	337	21	71	63	869	151	102	1032	79
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.04	0.29	0.29	0.06	0.31	0.31
Sat Flow, veh/h	597	375	756	1031	131	434	1810	3027	526	1810	3344	257
Grp Volume(v), veh/h	128	0	0	195	0	0	29	316	317	52	317	327
Grp Sat Flow(s),veh/h/ln	1729	0	0	1596	0	0	1810	1777	1776	1810	1777	1824
Q Serve(g_s), s	0.0	0.0	0.0	1.7	0.0	0.0	0.6	5.4	5.5	1.0	5.3	5.3
Cycle Q Clear(g_c), s	2.2	0.0	0.0	3.9	0.0	0.0	0.6	5.4	5.5	1.0	5.3	5.3
Prop In Lane	0.44		0.44	0.66		0.27	1.00		0.30	1.00		0.14
Lane Grp Cap(c), veh/h	428	0	0	430	0	0	63	510	510	102	548	563
V/C Ratio(X)	0.30	0.00	0.00	0.45	0.00	0.00	0.46	0.62	0.62	0.51	0.58	0.58
Avail Cap(c_a), veh/h	964	0	0	939	0	0	257	932	932	303	978	1004
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.3	0.0	0.0	13.9	0.0	0.0	16.7	10.9	10.9	16.2	10.3	10.3
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.8	0.0	0.0	5.1	1.2	1.2	3.9	1.0	1.0
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	1.3	0.0	0.0	0.3	1.5	1.5	0.4	1.4	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.7	0.0	0.0	14.6	0.0	0.0	21.7	12.1	12.2	20.0	11.2	11.2
LnGrp LOS	B	A	A	B	A	A	C	B	B	C	B	B
Approach Vol, veh/h		128			195			662			696	
Approach Delay, s/veh		13.7			14.6			12.6			11.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	15.8		11.7	6.9	16.6		11.7				
Change Period (Y+Rc), s	* 5.7	* 5.7		6.0	* 5.7	* 5.7		6.0				
Max Green Setting (Gmax), s	* 5.9	* 19		18.2	* 5	* 19		18.2				
Max Q Clear Time (g_c+I1), s	3.0	7.5		4.2	2.6	7.3		5.9				
Green Ext Time (p_c), s	0.0	2.7		0.5	0.0	2.8		0.8				

Intersection Summary		
HCM 6th Ctrl Delay	12.6	
HCM 6th LOS	B	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	11.2

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	171	0	170	0	407	25	147	272	0
Future Vol, veh/h	0	0	0	171	0	170	0	407	25	147	272	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	-	-	-	265	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	17	0	8	0	4	31	12	8	0
Mvmt Flow	0	0	0	180	0	179	0	452	28	163	302	0

Major/Minor	Minor2		Major1			Major2			
Conflicting Flow All	854	1108	151	-	0	0	480	0	0
Stage 1	628	628	-	-	-	-	-	-	-
Stage 2	226	480	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.5	7.06	-	-	-	4.34	-	-
Critical Hdwy Stg 1	6.14	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4	3.38	-	-	-	2.32	-	-
Pot Cap-1 Maneuver	270	212	850	0	-	-	1011	-	0
Stage 1	455	479	-	0	-	-	-	-	0
Stage 2	747	558	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	227	0	850	-	-	-	1011	-	-
Mov Cap-2 Maneuver	227	0	-	-	-	-	-	-	-
Stage 1	455	0	-	-	-	-	-	-	-
Stage 2	627	0	-	-	-	-	-	-	-

Approach	SB	NE	SW
HCM Control Delay, s	36.7	0	3.2
HCM LOS	E		

Minor Lane/Major Mvmt	NET	NER	SBLn1	SBLn2	SWL	SWT
Capacity (veh/h)	-	-	227	850	1011	-
HCM Lane V/C Ratio	-	-	0.793	0.211	0.162	-
HCM Control Delay (s)	-	-	62.8	10.4	9.2	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	5.8	0.8	0.6	-

Intersection	
Int Delay, s/veh	2.9

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	8	0	199	157	421	0	0	411	248
Future Vol, veh/h	0	0	0	8	0	199	157	421	0	0	411	248
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	130	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	67	0	14	6	7	0	0	8	7
Mvmt Flow	0	0	0	8	0	209	174	468	0	0	457	276

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	1045	1549	234	733	0	-	-	-	0
Stage 1	816	816	-	-	-	-	-	-	-
Stage 2	229	733	-	-	-	-	-	-	-
Critical Hdwy	8.14	6.5	7.18	4.22	-	-	-	-	-
Critical Hdwy Stg 1	7.14	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.14	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.17	4	3.44	2.26	-	-	-	-	-
Pot Cap-1 Maneuver	140	115	732	842	-	0	0	-	-
Stage 1	265	393	-	-	-	0	0	-	-
Stage 2	624	429	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	111	0	732	842	-	-	-	-	-
Mov Cap-2 Maneuver	111	0	-	-	-	-	-	-	-
Stage 1	210	0	-	-	-	-	-	-	-
Stage 2	624	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	13	2.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NWLn1	NWLn2	SWT	SWR
Capacity (veh/h)	842	-	111	732	-	-
HCM Lane V/C Ratio	0.207	-	0.076	0.286	-	-
HCM Control Delay (s)	10.4	-	40.1	11.9	-	-
HCM Lane LOS	B	-	E	B	-	-
HCM 95th %tile Q(veh)	0.8	-	0.2	1.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	66	21	35	92	78	198	41	450	66	231	535	96
Future Volume (veh/h)	66	21	35	92	78	198	41	450	66	231	535	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1781	1263	1826	1900	1900	1574	1767	1796	1841	1781	1900
Adj Flow Rate, veh/h	78	25	41	102	87	0	46	500	73	257	594	107
Peak Hour Factor	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	8	43	5	0	0	22	9	7	4	8	0
Cap, veh/h	240	64	71	259	134		73	735	107	324	1107	199
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.00	0.05	0.25	0.25	0.19	0.39	0.39
Sat Flow, veh/h	736	411	456	854	853	1610	1499	2940	428	1753	2866	515
Grp Volume(v), veh/h	144	0	0	189	0	0	46	284	289	257	350	351
Grp Sat Flow(s),veh/h/ln	1603	0	0	1707	0	1610	1499	1678	1690	1753	1692	1689
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.0	0.0	1.3	6.8	6.8	6.2	7.1	7.1
Cycle Q Clear(g_c), s	3.4	0.0	0.0	4.4	0.0	0.0	1.3	6.8	6.8	6.2	7.1	7.1
Prop In Lane	0.54		0.28	0.54		1.00	1.00		0.25	1.00		0.30
Lane Grp Cap(c), veh/h	376	0	0	392	0		73	419	422	324	653	652
V/C Ratio(X)	0.38	0.00	0.00	0.48	0.00		0.63	0.68	0.68	0.79	0.54	0.54
Avail Cap(c_a), veh/h	782	0	0	825	0		240	704	709	558	978	976
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	0.0	0.0	17.6	0.0	0.0	20.7	15.0	15.0	17.2	10.5	10.5
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.9	0.0	0.0	8.6	1.9	2.0	4.4	0.7	0.7
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	1.4	0.0	0.0	0.6	2.2	2.2	2.3	1.9	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.8	0.0	0.0	18.5	0.0	0.0	29.3	16.9	17.0	21.6	11.2	11.2
LnGrp LOS	B	A	A	B	A		C	B	B	C	B	B
Approach Vol, veh/h		144			189	A		619			958	
Approach Delay, s/veh		17.8			18.5			17.9			14.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.1	17.0		13.2	8.1	23.0		13.2				
Change Period (Y+Rc), s	* 5.9	* 5.9		* 6.3	* 5.9	* 5.9		* 6.3				
Max Green Setting (Gmax), s	* 14	* 19		* 20	* 7.1	* 26		* 19				
Max Q Clear Time (g_c+I1), s	8.2	8.8		5.4	3.3	9.1		6.4				
Green Ext Time (p_c), s	0.4	2.2		0.6	0.0	3.6		0.6				

Intersection Summary	
HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	28	212	110	45	54	183	459	89	26	583	62
Future Volume (veh/h)	59	28	212	110	45	54	183	459	89	26	583	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1796	1900	1900	1796	1900	1796	1811	1856	1900
Adj Flow Rate, veh/h	66	31	0	122	50	60	203	510	99	29	648	69
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	7	0	0	7	0	7	6	3	0
Cap, veh/h	216	78		328	97	287	255	784	151	297	908	97
Arrive On Green	0.18	0.18	0.00	0.18	0.18	0.18	0.15	0.26	0.26	0.17	0.28	0.28
Sat Flow, veh/h	465	437	0	1083	545	1610	1711	3017	583	1725	3215	342
Grp Volume(v), veh/h	97	0	0	172	0	60	203	304	305	29	355	362
Grp Sat Flow(s),veh/h/ln	903	0	0	1628	0	1610	1711	1805	1795	1725	1763	1794
Q Serve(g_s), s	1.7	0.0	0.0	0.0	0.0	1.4	5.2	6.8	6.9	0.6	8.2	8.2
Cycle Q Clear(g_c), s	5.9	0.0	0.0	4.3	0.0	1.4	5.2	6.8	6.9	0.6	8.2	8.2
Prop In Lane	0.68		0.00	0.71		1.00	1.00		0.32	1.00		0.19
Lane Grp Cap(c), veh/h	294	0		426	0	287	255	469	466	297	498	507
V/C Ratio(X)	0.33	0.00		0.40	0.00	0.21	0.79	0.65	0.65	0.10	0.71	0.71
Avail Cap(c_a), veh/h	633	0		784	0	667	377	939	934	297	723	736
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.9	0.0	0.0	17.1	0.0	15.9	18.6	15.0	15.0	15.8	14.6	14.6
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.6	0.0	0.4	7.0	1.5	1.6	0.1	1.9	1.9
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	1.5	0.0	0.5	2.1	2.3	2.3	0.2	2.7	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.6	0.0	0.0	17.7	0.0	16.3	25.6	16.5	16.5	16.0	16.5	16.5
LnGrp LOS	B	A		B	A	B	C	B	B	B	B	B
Approach Vol, veh/h		97	A		232			812			746	
Approach Delay, s/veh		18.6			17.3			18.8			16.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.8	17.8		13.8	12.8	18.8		13.8
Change Period (Y+Rc), s	* 6	* 6		* 5.7	* 6	* 6		* 5.7
Max Green Setting (Gmax), s	* 5	* 24		* 19	* 10	* 19		* 19
Max Q Clear Time (g_c+I1), s	12.6	8.9		7.9	7.2	10.2		6.3
Green Ext Time (p_c), s	0.0	2.9		0.3	0.1	2.6		0.9

Intersection Summary	
HCM 6th Ctrl Delay	17.7
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	24	290	33	2	274	14	32	11	5	5	15	20
Future Vol, veh/h	24	290	33	2	274	14	32	11	5	5	15	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	85	85	85	85	85	85
Heavy Vehicles, %	0	8	0	0	4	0	6	0	0	0	0	0
Mvmt Flow	27	322	37	2	304	16	38	13	6	6	18	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	320	0	0	359	0	0	732	719	341	720	729	312
Stage 1	-	-	-	-	-	-	395	395	-	316	316	-
Stage 2	-	-	-	-	-	-	337	324	-	404	413	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.16	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.554	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1251	-	-	1211	-	-	332	357	706	346	352	733
Stage 1	-	-	-	-	-	-	622	608	-	699	659	-
Stage 2	-	-	-	-	-	-	669	653	-	627	597	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1251	-	-	1211	-	-	302	347	706	326	342	733
Mov Cap-2 Maneuver	-	-	-	-	-	-	302	347	-	326	342	-
Stage 1	-	-	-	-	-	-	605	592	-	680	658	-
Stage 2	-	-	-	-	-	-	629	652	-	592	581	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	18.1	13.7
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	332	1251	-	-	1211	-	-	463
HCM Lane V/C Ratio	0.17	0.021	-	-	0.002	-	-	0.102
HCM Control Delay (s)	18.1	7.9	0	-	8	0	-	13.7
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	171	8	8	144	6	8
Future Vol, veh/h	171	8	8	144	6	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	85	85
Heavy Vehicles, %	7	0	0	6	0	0
Mvmt Flow	190	9	9	160	7	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	199	0	373	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	178	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1385	-	632	851
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	858	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1385	-	628	851
Mov Cap-2 Maneuver	-	-	-	-	628	-
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	852	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	739	-	-	1385	-
HCM Lane V/C Ratio	0.022	-	-	0.006	-
HCM Control Delay (s)	10	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

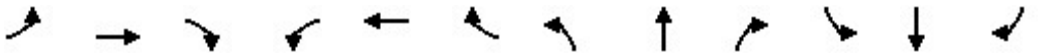
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	20	12	560	651	20
Future Vol, veh/h	3	20	12	560	651	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	90	90	90	90
Heavy Vehicles, %	0	0	0	0	3	0
Mvmt Flow	4	24	13	622	723	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1071	373	745	0	-	0
Stage 1	734	-	-	-	-	-
Stage 2	337	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	219	630	872	-	-	-
Stage 1	441	-	-	-	-	-
Stage 2	701	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	214	630	872	-	-	-
Mov Cap-2 Maneuver	214	-	-	-	-	-
Stage 1	431	-	-	-	-	-
Stage 2	701	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.6	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	872	-	503	-	-
HCM Lane V/C Ratio	0.015	-	0.054	-	-
HCM Control Delay (s)	9.2	0.1	12.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	0	6	83	2	29	17	520	26	12	473	29
Future Volume (veh/h)	42	0	6	83	2	29	17	520	26	12	473	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	907	1900	1900	1900	1900	1885	1900	1900	1856	1604
Adj Flow Rate, veh/h	49	0	7	98	2	34	19	578	29	13	526	32
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	67	0	0	0	0	1	0	0	3	20
Cap, veh/h	392	15	27	348	3	51	59	1017	51	31	938	57
Arrive On Green	0.13	0.00	0.13	0.13	0.13	0.13	0.03	0.29	0.29	0.02	0.28	0.28
Sat Flow, veh/h	1345	114	208	1136	23	394	1810	3471	174	1810	3376	205
Grp Volume(v), veh/h	56	0	0	134	0	0	19	298	309	13	274	284
Grp Sat Flow(s),veh/h/ln	1667	0	0	1553	0	0	1810	1791	1854	1810	1763	1819
Q Serve(g_s), s	0.0	0.0	0.0	1.6	0.0	0.0	0.3	4.4	4.4	0.2	4.1	4.1
Cycle Q Clear(g_c), s	0.9	0.0	0.0	2.5	0.0	0.0	0.3	4.4	4.4	0.2	4.1	4.1
Prop In Lane	0.87		0.12	0.73		0.25	1.00		0.09	1.00		0.11
Lane Grp Cap(c), veh/h	434	0	0	402	0	0	59	525	543	31	490	505
V/C Ratio(X)	0.13	0.00	0.00	0.33	0.00	0.00	0.32	0.57	0.57	0.42	0.56	0.56
Avail Cap(c_a), veh/h	1080	0	0	1076	0	0	297	1119	1158	291	1095	1130
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.1	0.0	0.0	12.8	0.0	0.0	14.7	9.3	9.3	15.1	9.6	9.6
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.5	0.0	0.0	3.2	1.0	0.9	8.8	1.0	1.0
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.7	0.0	0.0	0.1	1.0	1.1	0.1	1.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.3	0.0	0.0	13.3	0.0	0.0	17.9	10.3	10.3	23.9	10.6	10.6
LnGrp LOS	B	A	A	B	A	A	B	B	B	C	B	B
Approach Vol, veh/h		56			134			626			571	
Approach Delay, s/veh		12.3			13.3			10.5			10.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	14.8		10.0	6.7	14.3		10.0				
Change Period (Y+Rc), s	* 5.7	* 5.7		6.0	* 5.7	* 5.7		6.0				
Max Green Setting (Gmax), s	* 5	* 19		18.2	* 5.1	* 19		18.2				
Max Q Clear Time (g_c+I1), s	2.2	6.4		2.9	2.3	6.1		4.5				
Green Ext Time (p_c), s	0.0	2.7		0.2	0.0	2.5		0.5				

Intersection Summary			
HCM 6th Ctrl Delay		11.0	
HCM 6th LOS		B	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	21.2

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	228	3	180	0	396	58	148	311	0
Future Vol, veh/h	0	0	0	228	3	180	0	396	58	148	311	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	-	-	-	265	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	50	9	0	2	10	6	1	0
Mvmt Flow	0	0	0	240	3	189	0	440	64	164	346	0

Major/Minor	Minor2		Major1			Major2			
Conflicting Flow All	894	1178	173	-	0	0	504	0	0
Stage 1	674	674	-	-	-	-	-	-	-
Stage 2	220	504	-	-	-	-	-	-	-
Critical Hdwy	6.84	7.5	7.08	-	-	-	4.22	-	-
Critical Hdwy Stg 1	5.84	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.5	3.39	-	-	-	2.26	-	-
Pot Cap-1 Maneuver	281	131	819	0	-	-	1029	-	0
Stage 1	468	351	-	0	-	-	-	-	0
Stage 2	795	434	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	~ 236	0	819	-	-	-	1029	-	-
Mov Cap-2 Maneuver	~ 236	0	-	-	-	-	-	-	-
Stage 1	468	0	-	-	-	-	-	-	-
Stage 2	669	0	-	-	-	-	-	-	-

Approach	SB	NE	SW
HCM Control Delay, s	67.4	0	3
HCM LOS	F		

Minor Lane/Major Mvmt	NET	NER	SBLn1	SBLn2	SWL	SWT
Capacity (veh/h)	-	-	236	819	1029	-
HCM Lane V/C Ratio	-	-	1.03	0.231	0.16	-
HCM Control Delay (s)	-	-	111.5	10.7	9.2	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	10	0.9	0.6	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	7	1	165	131	493	0	0	452	206
Future Vol, veh/h	0	0	0	7	1	165	131	493	0	0	452	206
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	130	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	0	0	4	1	3	0	0	3	4
Mvmt Flow	0	0	0	7	1	174	146	548	0	0	502	229

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	1091	1571	274	731	0	-	-	-	0
Stage 1	840	840	-	-	-	-	-	-	-
Stage 2	251	731	-	-	-	-	-	-	-
Critical Hdwy	6.8	6.5	6.98	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.8	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.8	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.34	2.21	-	-	-	-	-
Pot Cap-1 Maneuver	213	112	718	876	-	0	0	-	-
Stage 1	389	384	-	-	-	0	0	-	-
Stage 2	774	430	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	177	0	718	876	-	-	-	-	-
Mov Cap-2 Maneuver	177	0	-	-	-	-	-	-	-
Stage 1	324	0	-	-	-	-	-	-	-
Stage 2	774	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	12.3	2.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NWLn1	NWLn2	SWT	SWR
Capacity (veh/h)	876	-	177	718	-	-
HCM Lane V/C Ratio	0.166	-	0.048	0.242	-	-
HCM Control Delay (s)	9.9	-	26.4	11.6	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.6	-	0.1	0.9	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	92	42	39	98	26	219	72	351	119	234	516	42
Future Volume (veh/h)	92	42	39	98	26	219	72	351	119	234	516	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1900	1885	1900	1856	1870	1900	1870	1900
Adj Flow Rate, veh/h	108	49	46	109	29	0	80	390	132	260	573	47
Peak Hour Factor	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	2	0	1	0	3	2	0	2	0
Cap, veh/h	264	86	65	354	78		269	601	201	323	870	71
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.00	0.15	0.23	0.23	0.18	0.26	0.26
Sat Flow, veh/h	793	495	378	1186	450	1598	1810	2595	867	1810	3326	272
Grp Volume(v), veh/h	203	0	0	138	0	0	80	263	259	260	306	314
Grp Sat Flow(s),veh/h/ln	1666	0	0	1636	0	1598	1810	1763	1699	1810	1777	1821
Q Serve(g_s), s	1.7	0.0	0.0	0.0	0.0	0.0	1.7	5.9	6.0	6.0	6.7	6.7
Cycle Q Clear(g_c), s	4.8	0.0	0.0	3.0	0.0	0.0	1.7	5.9	6.0	6.0	6.7	6.7
Prop In Lane	0.53		0.23	0.79		1.00	1.00		0.51	1.00		0.15
Lane Grp Cap(c), veh/h	415	0	0	432	0		269	409	394	323	465	477
V/C Ratio(X)	0.49	0.00	0.00	0.32	0.00		0.30	0.64	0.66	0.81	0.66	0.66
Avail Cap(c_a), veh/h	856	0	0	811	0		296	743	716	392	843	864
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	0.0	0.0	16.1	0.0	0.0	16.5	15.1	15.1	17.1	14.3	14.3
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.4	0.0	0.0	0.6	1.7	1.9	9.8	1.6	1.6
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0	0.9	0.0	0.0	0.6	2.0	1.9	2.8	2.2	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.6	0.0	0.0	16.5	0.0	0.0	17.1	16.8	17.0	26.9	15.9	15.9
LnGrp LOS	B	A	A	B	A		B	B	B	C	B	B
Approach Vol, veh/h		203			138	A		602			880	
Approach Delay, s/veh		17.6			16.5			16.9			19.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.6	16.0		13.8	12.4	17.3		13.8				
Change Period (Y+Rc), s	* 5.9	* 5.9		* 6.3	* 5.9	* 5.9		* 6.3				
Max Green Setting (Gmax), s	* 9.4	* 18		* 20	* 7.1	* 21		* 19				
Max Q Clear Time (g_c+I1), s	8.0	8.0		6.8	3.7	8.7		5.0				
Green Ext Time (p_c), s	0.1	2.1		0.9	0.0	2.7		0.5				

Intersection Summary	
HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	27	183	142	41	29	211	569	111	35	616	90
Future Volume (veh/h)	44	27	183	142	41	29	211	569	111	35	616	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1870	1870	1900	1885	1900
Adj Flow Rate, veh/h	49	30	0	158	46	32	234	632	123	39	684	100
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	1	2	2	0	1	0
Cap, veh/h	175	81		346	65	309	290	1213	236	76	906	132
Arrive On Green	0.19	0.19	0.00	0.19	0.19	0.19	0.16	0.41	0.41	0.04	0.29	0.29
Sat Flow, veh/h	296	423	0	1129	337	1610	1795	2967	576	1810	3136	458
Grp Volume(v), veh/h	79	0	0	204	0	32	234	378	377	39	390	394
Grp Sat Flow(s),veh/h/ln	720	0	0	1465	0	1610	1795	1777	1767	1810	1791	1803
Q Serve(g_s), s	1.0	0.0	0.0	0.0	0.0	0.8	6.2	7.9	7.9	1.0	9.8	9.8
Cycle Q Clear(g_c), s	7.5	0.0	0.0	6.5	0.0	0.8	6.2	7.9	7.9	1.0	9.8	9.8
Prop In Lane	0.62		0.00	0.77		1.00	1.00		0.33	1.00		0.25
Lane Grp Cap(c), veh/h	256	0		410	0	309	290	726	722	76	518	521
V/C Ratio(X)	0.31	0.00		0.50	0.00	0.10	0.81	0.52	0.52	0.51	0.75	0.76
Avail Cap(c_a), veh/h	536	0		690	0	611	363	847	842	183	673	677
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	0.0	0.0	18.8	0.0	16.5	20.0	11.0	11.0	23.2	16.0	16.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.9	0.0	0.1	10.3	0.6	0.6	5.3	3.5	3.6
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	2.1	0.0	0.3	3.0	2.3	2.3	0.5	3.6	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.2	0.0	0.0	19.7	0.0	16.6	30.3	11.6	11.6	28.5	19.5	19.6
LnGrp LOS	B	A		B	A	B	C	B	B	C	B	B
Approach Vol, veh/h		79	A		236			989			823	
Approach Delay, s/veh		19.2			19.3			16.0			20.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.1	26.2		15.2	14.0	20.3		15.2
Change Period (Y+Rc), s	* 6	* 6		* 5.7	* 6	* 6		* 5.7
Max Green Setting (Gmax), s	* 5	* 24		* 19	* 10	* 19		* 19
Max Q Clear Time (g_c+I1), s	3.0	9.9		9.5	8.2	11.8		8.5
Green Ext Time (p_c), s	0.0	3.6		0.2	0.1	2.5		0.8

Intersection Summary	
HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	32	225	32	5	301	36	48	23	10	19	26	26
Future Vol, veh/h	32	225	32	5	301	36	48	23	10	19	26	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	85	85	85	85	85	85
Heavy Vehicles, %	0	2	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	36	250	36	6	334	40	56	27	12	22	31	31

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	374	0	0	286	0	0	737	726	268	726	724	354
Stage 1	-	-	-	-	-	-	340	340	-	366	366	-
Stage 2	-	-	-	-	-	-	397	386	-	360	358	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1196	-	-	1288	-	-	337	354	776	343	354	694
Stage 1	-	-	-	-	-	-	679	643	-	657	626	-
Stage 2	-	-	-	-	-	-	633	614	-	662	631	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1196	-	-	1288	-	-	290	339	776	307	339	694
Mov Cap-2 Maneuver	-	-	-	-	-	-	290	339	-	307	339	-
Stage 1	-	-	-	-	-	-	655	620	-	633	622	-
Stage 2	-	-	-	-	-	-	572	610	-	601	608	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.1	20.3	16.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	329	1196	-	-	1288	-	-	403
HCM Lane V/C Ratio	0.29	0.03	-	-	0.004	-	-	0.207
HCM Control Delay (s)	20.3	8.1	0	-	7.8	0	-	16.3
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.2	0.1	-	-	0	-	-	0.8

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	147	3	6	179	0	9
Future Vol, veh/h	147	3	6	179	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	85	85
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	163	3	7	199	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	166	0	378	165
Stage 1	-	-	-	-	165	-
Stage 2	-	-	-	-	213	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1424	-	628	885
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	827	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1424	-	624	885
Mov Cap-2 Maneuver	-	-	-	-	624	-
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	822	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	885	-	-	1424	-
HCM Lane V/C Ratio	0.012	-	-	0.005	-
HCM Control Delay (s)	9.1	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

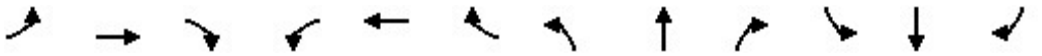
Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	58	54	588	684	12
Future Vol, veh/h	8	58	54	588	684	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	90	90	90	90
Heavy Vehicles, %	0	0	0	2	2	0
Mvmt Flow	9	68	60	653	760	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1214	387	773	0	-	0
Stage 1	767	-	-	-	-	-
Stage 2	447	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	177	617	851	-	-	-
Stage 1	424	-	-	-	-	-
Stage 2	617	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	157	617	851	-	-	-
Mov Cap-2 Maneuver	157	-	-	-	-	-
Stage 1	377	-	-	-	-	-
Stage 2	617	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.5	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	851	-	455	-	-
HCM Lane V/C Ratio	0.071	-	0.171	-	-
HCM Control Delay (s)	9.6	0.4	14.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	14	48	110	11	45	26	485	85	47	538	41
Future Volume (veh/h)	48	14	48	110	11	45	26	485	85	47	538	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1796	1900	1900	1737	1900	1870	1900	1900	1870	1900
Adj Flow Rate, veh/h	56	16	56	129	13	53	29	539	94	52	598	46
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	7	0	0	11	0	2	0	0	2	0
Cap, veh/h	244	61	123	337	21	71	63	869	151	102	1032	79
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.04	0.29	0.29	0.06	0.31	0.31
Sat Flow, veh/h	597	375	756	1031	131	434	1810	3027	526	1810	3344	257
Grp Volume(v), veh/h	128	0	0	195	0	0	29	316	317	52	317	327
Grp Sat Flow(s),veh/h/ln	1729	0	0	1596	0	0	1810	1777	1776	1810	1777	1824
Q Serve(g_s), s	0.0	0.0	0.0	1.7	0.0	0.0	0.6	5.4	5.5	1.0	5.3	5.3
Cycle Q Clear(g_c), s	2.2	0.0	0.0	3.9	0.0	0.0	0.6	5.4	5.5	1.0	5.3	5.3
Prop In Lane	0.44		0.44	0.66		0.27	1.00		0.30	1.00		0.14
Lane Grp Cap(c), veh/h	428	0	0	430	0	0	63	510	510	102	548	563
V/C Ratio(X)	0.30	0.00	0.00	0.45	0.00	0.00	0.46	0.62	0.62	0.51	0.58	0.58
Avail Cap(c_a), veh/h	964	0	0	939	0	0	257	932	932	303	978	1004
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.3	0.0	0.0	13.9	0.0	0.0	16.7	10.9	10.9	16.2	10.3	10.3
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.8	0.0	0.0	5.1	1.2	1.2	3.9	1.0	1.0
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	1.3	0.0	0.0	0.3	1.5	1.5	0.4	1.4	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.7	0.0	0.0	14.6	0.0	0.0	21.7	12.1	12.2	20.0	11.2	11.2
LnGrp LOS	B	A	A	B	A	A	C	B	B	C	B	B
Approach Vol, veh/h		128			195			662			696	
Approach Delay, s/veh		13.7			14.6			12.6			11.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	15.8		11.7	6.9	16.6		11.7				
Change Period (Y+Rc), s	* 5.7	* 5.7		6.0	* 5.7	* 5.7		6.0				
Max Green Setting (Gmax), s	* 5.9	* 19		18.2	* 5	* 19		18.2				
Max Q Clear Time (g_c+I1), s	3.0	7.5		4.2	2.6	7.3		5.9				
Green Ext Time (p_c), s	0.0	2.7		0.5	0.0	2.8		0.8				

Intersection Summary		
HCM 6th Ctrl Delay	12.6	
HCM 6th LOS	B	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	11.2

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	171	0	170	0	407	25	147	272	0
Future Vol, veh/h	0	0	0	171	0	170	0	407	25	147	272	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	-	-	-	265	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	17	0	8	0	4	31	12	8	0
Mvmt Flow	0	0	0	180	0	179	0	452	28	163	302	0

Major/Minor	Minor2		Major1			Major2			
Conflicting Flow All	854	1108	151	-	0	0	480	0	0
Stage 1	628	628	-	-	-	-	-	-	-
Stage 2	226	480	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.5	7.06	-	-	-	4.34	-	-
Critical Hdwy Stg 1	6.14	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4	3.38	-	-	-	2.32	-	-
Pot Cap-1 Maneuver	270	212	850	0	-	-	1011	-	0
Stage 1	455	479	-	0	-	-	-	-	0
Stage 2	747	558	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	227	0	850	-	-	-	1011	-	-
Mov Cap-2 Maneuver	227	0	-	-	-	-	-	-	-
Stage 1	455	0	-	-	-	-	-	-	-
Stage 2	627	0	-	-	-	-	-	-	-

Approach	SB	NE	SW
HCM Control Delay, s	36.7	0	3.2
HCM LOS	E		

Minor Lane/Major Mvmt	NET	NER	SBLn1	SBLn2	SWL	SWT
Capacity (veh/h)	-	-	227	850	1011	-
HCM Lane V/C Ratio	-	-	0.793	0.211	0.162	-
HCM Control Delay (s)	-	-	62.8	10.4	9.2	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	5.8	0.8	0.6	-

Intersection	
Int Delay, s/veh	2.9

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	8	0	199	157	421	0	0	411	248
Future Vol, veh/h	0	0	0	8	0	199	157	421	0	0	411	248
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	130	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	67	0	14	6	7	0	0	8	7
Mvmt Flow	0	0	0	8	0	209	174	468	0	0	457	276

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	1045	1549	234	733	0	-	-	-	0
Stage 1	816	816	-	-	-	-	-	-	-
Stage 2	229	733	-	-	-	-	-	-	-
Critical Hdwy	8.14	6.5	7.18	4.22	-	-	-	-	-
Critical Hdwy Stg 1	7.14	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.14	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.17	4	3.44	2.26	-	-	-	-	-
Pot Cap-1 Maneuver	140	115	732	842	-	0	0	-	-
Stage 1	265	393	-	-	-	0	0	-	-
Stage 2	624	429	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	111	0	732	842	-	-	-	-	-
Mov Cap-2 Maneuver	111	0	-	-	-	-	-	-	-
Stage 1	210	0	-	-	-	-	-	-	-
Stage 2	624	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	13	2.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NWLn1	NWLn2	SWT	SWR
Capacity (veh/h)	842	-	111	732	-	-
HCM Lane V/C Ratio	0.207	-	0.076	0.286	-	-
HCM Control Delay (s)	10.4	-	40.1	11.9	-	-
HCM Lane LOS	B	-	E	B	-	-
HCM 95th %tile Q(veh)	0.8	-	0.2	1.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	66	21	35	92	78	198	41	450	66	231	535	96
Future Volume (veh/h)	66	21	35	92	78	198	41	450	66	231	535	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1781	1263	1826	1900	1900	1574	1767	1796	1841	1781	1900
Adj Flow Rate, veh/h	78	25	41	102	87	0	46	500	73	257	594	107
Peak Hour Factor	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	8	43	5	0	0	22	9	7	4	8	0
Cap, veh/h	240	64	71	259	134		73	735	107	324	1107	199
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.00	0.05	0.25	0.25	0.19	0.39	0.39
Sat Flow, veh/h	736	411	456	854	853	1610	1499	2940	428	1753	2866	515
Grp Volume(v), veh/h	144	0	0	189	0	0	46	284	289	257	350	351
Grp Sat Flow(s),veh/h/ln	1603	0	0	1707	0	1610	1499	1678	1690	1753	1692	1689
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.0	0.0	1.3	6.8	6.8	6.2	7.1	7.1
Cycle Q Clear(g_c), s	3.4	0.0	0.0	4.4	0.0	0.0	1.3	6.8	6.8	6.2	7.1	7.1
Prop In Lane	0.54		0.28	0.54		1.00	1.00		0.25	1.00		0.30
Lane Grp Cap(c), veh/h	376	0	0	392	0		73	419	422	324	653	652
V/C Ratio(X)	0.38	0.00	0.00	0.48	0.00		0.63	0.68	0.68	0.79	0.54	0.54
Avail Cap(c_a), veh/h	782	0	0	825	0		240	704	709	558	978	976
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	0.0	0.0	17.6	0.0	0.0	20.7	15.0	15.0	17.2	10.5	10.5
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.9	0.0	0.0	8.6	1.9	2.0	4.4	0.7	0.7
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	1.4	0.0	0.0	0.6	2.2	2.2	2.3	1.9	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.8	0.0	0.0	18.5	0.0	0.0	29.3	16.9	17.0	21.6	11.2	11.2
LnGrp LOS	B	A	A	B	A		C	B	B	C	B	B
Approach Vol, veh/h		144			189	A		619			958	
Approach Delay, s/veh		17.8			18.5			17.9			14.0	
Approach LOS		B			B			B			B	

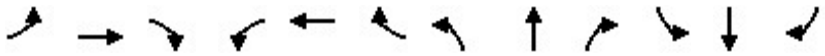
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.1	17.0		13.2	8.1	23.0		13.2				
Change Period (Y+Rc), s	* 5.9	* 5.9		* 6.3	* 5.9	* 5.9		* 6.3				
Max Green Setting (Gmax), s	* 14	* 19		* 20	* 7.1	* 26		* 19				
Max Q Clear Time (g_c+I1), s	8.2	8.8		5.4	3.3	9.1		6.4				
Green Ext Time (p_c), s	0.4	2.2		0.6	0.0	3.6		0.6				

Intersection Summary	
HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	29	241	110	45	54	183	459	89	25	557	60
Future Volume (veh/h)	62	29	241	110	45	54	183	459	89	25	557	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1796	1900	1900	1796	1900	1796	1811	1856	1900
Adj Flow Rate, veh/h	69	32	0	122	50	60	203	510	99	28	619	67
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	7	0	0	7	0	7	6	3	0
Cap, veh/h	222	79		332	100	291	256	1181	228	57	882	95
Arrive On Green	0.18	0.18	0.00	0.18	0.18	0.18	0.15	0.39	0.39	0.03	0.27	0.27
Sat Flow, veh/h	479	437	0	1079	552	1610	1711	3017	583	1725	3209	347
Grp Volume(v), veh/h	101	0	0	172	0	60	203	304	305	28	340	346
Grp Sat Flow(s),veh/h/ln	916	0	0	1631	0	1610	1711	1805	1795	1725	1763	1793
Q Serve(g_s), s	1.8	0.0	0.0	0.0	0.0	1.4	5.1	5.5	5.6	0.7	7.8	7.8
Cycle Q Clear(g_c), s	6.0	0.0	0.0	4.2	0.0	1.4	5.1	5.5	5.6	0.7	7.8	7.8
Prop In Lane	0.68		0.00	0.71		1.00	1.00		0.32	1.00		0.19
Lane Grp Cap(c), veh/h	301	0		432	0	291	256	707	703	57	485	493
V/C Ratio(X)	0.34	0.00		0.40	0.00	0.21	0.79	0.43	0.43	0.49	0.70	0.70
Avail Cap(c_a), veh/h	643	0		793	0	675	381	950	945	192	731	744
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.7	0.0	0.0	16.7	0.0	15.6	18.4	10.0	10.0	21.3	14.6	14.6
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.6	0.0	0.3	6.7	0.4	0.4	6.5	1.9	1.8
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	1.5	0.0	0.5	2.1	1.5	1.5	0.3	2.6	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.4	0.0	0.0	17.3	0.0	16.0	25.2	10.4	10.4	27.8	16.5	16.4
LnGrp LOS	B	A		B	A	B	C	B	B	C	B	B
Approach Vol, veh/h		101	A		232			812			714	
Approach Delay, s/veh		18.4			17.0			14.1			16.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.5	23.6		13.8	12.7	18.3		13.8
Change Period (Y+Rc), s	* 6	* 6		* 5.7	* 6	* 6		* 5.7
Max Green Setting (Gmax), s	* 5	* 24		* 19	* 10	* 19		* 19
Max Q Clear Time (g_c+I1), s	2.7	7.6		8.0	7.1	9.8		6.2
Green Ext Time (p_c), s	0.0	3.0		0.3	0.1	2.5		0.9

Intersection Summary	
HCM 6th Ctrl Delay	15.8
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	24	322	33	2	272	14	32	11	5	5	15	20
Future Vol, veh/h	24	322	33	2	272	14	32	11	5	5	15	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	85	85	85	85	85	85
Heavy Vehicles, %	0	8	0	0	4	0	6	0	0	0	0	0
Mvmt Flow	27	358	37	2	302	16	38	13	6	6	18	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	318	0	0	395	0	0	766	753	377	754	763	310
Stage 1	-	-	-	-	-	-	431	431	-	314	314	-
Stage 2	-	-	-	-	-	-	335	322	-	440	449	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.16	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.554	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1253	-	-	1175	-	-	315	341	674	328	337	735
Stage 1	-	-	-	-	-	-	595	586	-	701	660	-
Stage 2	-	-	-	-	-	-	671	655	-	600	576	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1253	-	-	1175	-	-	286	331	674	308	327	735
Mov Cap-2 Maneuver	-	-	-	-	-	-	286	331	-	308	327	-
Stage 1	-	-	-	-	-	-	578	570	-	681	659	-
Stage 2	-	-	-	-	-	-	631	654	-	565	560	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	18.9	14
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	315	1253	-	-	1175	-	-	448
HCM Lane V/C Ratio	0.179	0.021	-	-	0.002	-	-	0.105
HCM Control Delay (s)	18.9	7.9	0	-	8.1	0	-	14
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	171	8	8	144	6	8
Future Vol, veh/h	171	8	8	144	6	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	85	85
Heavy Vehicles, %	7	0	0	6	0	0
Mvmt Flow	190	9	9	160	7	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	199	0	373	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	178	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1385	-	632	851
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	858	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1385	-	628	851
Mov Cap-2 Maneuver	-	-	-	-	628	-
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	852	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	739	-	-	1385	-
HCM Lane V/C Ratio	0.022	-	-	0.006	-
HCM Control Delay (s)	10	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

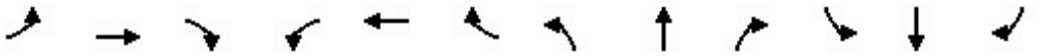
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	21	13	562	621	19
Future Vol, veh/h	3	21	13	562	621	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	90	90	90	90
Heavy Vehicles, %	0	0	0	0	3	0
Mvmt Flow	4	25	14	624	690	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1041	356	711	0	-	0
Stage 1	701	-	-	-	-	-
Stage 2	340	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	229	646	898	-	-	-
Stage 1	459	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	224	646	898	-	-	-
Mov Cap-2 Maneuver	224	-	-	-	-	-
Stage 1	448	-	-	-	-	-
Stage 2	698	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.3	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	898	-	523	-	-
HCM Lane V/C Ratio	0.016	-	0.054	-	-
HCM Control Delay (s)	9.1	0.1	12.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	0	6	83	2	29	18	520	27	14	551	34
Future Volume (veh/h)	42	0	6	83	2	29	18	520	27	14	551	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	907	1900	1900	1900	1900	1885	1900	1900	1856	1604
Adj Flow Rate, veh/h	49	0	7	98	2	34	20	578	30	16	612	38
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	67	0	0	0	0	1	0	0	3	20
Cap, veh/h	382	14	27	338	3	50	46	1077	56	37	1032	64
Arrive On Green	0.13	0.00	0.13	0.13	0.13	0.13	0.03	0.31	0.31	0.02	0.31	0.31
Sat Flow, veh/h	1352	112	209	1137	23	395	1810	3464	180	1810	3372	209
Grp Volume(v), veh/h	56	0	0	134	0	0	20	298	310	16	320	330
Grp Sat Flow(s),veh/h/ln	1673	0	0	1555	0	0	1810	1791	1853	1810	1763	1818
Q Serve(g_s), s	0.0	0.0	0.0	1.7	0.0	0.0	0.3	4.4	4.4	0.3	4.9	5.0
Cycle Q Clear(g_c), s	0.9	0.0	0.0	2.6	0.0	0.0	0.3	4.4	4.4	0.3	4.9	5.0
Prop In Lane	0.87		0.12	0.73		0.25	1.00		0.10	1.00		0.12
Lane Grp Cap(c), veh/h	423	0	0	392	0	0	46	557	576	37	539	556
V/C Ratio(X)	0.13	0.00	0.00	0.34	0.00	0.00	0.43	0.54	0.54	0.43	0.59	0.59
Avail Cap(c_a), veh/h	1045	0	0	1041	0	0	282	1081	1119	282	1064	1098
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.6	0.0	0.0	13.3	0.0	0.0	15.4	9.2	9.2	15.5	9.5	9.5
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.5	0.0	0.0	6.3	0.8	0.8	7.5	1.0	1.0
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.8	0.0	0.0	0.2	1.0	1.1	0.2	1.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.8	0.0	0.0	13.8	0.0	0.0	21.8	10.0	9.9	23.1	10.5	10.5
LnGrp LOS	B	A	A	B	A	A	C	A	A	C	B	B
Approach Vol, veh/h		56			134			628			666	
Approach Delay, s/veh		12.8			13.8			10.3			10.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	15.7		10.1	6.5	15.5		10.1				
Change Period (Y+Rc), s	* 5.7	* 5.7		6.0	* 5.7	* 5.7		6.0				
Max Green Setting (Gmax), s	* 5	* 19		18.2	* 5	* 19		18.2				
Max Q Clear Time (g_c+I1), s	2.3	6.4		2.9	2.3	7.0		4.6				
Green Ext Time (p_c), s	0.0	2.7		0.2	0.0	2.9		0.5				

Intersection Summary		
HCM 6th Ctrl Delay		10.9
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↱	
Traffic Vol, veh/h	253	0	0	247	2	32
Future Vol, veh/h	253	0	0	247	2	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Yield
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	281	0	0	274	2	34

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	555	281
Stage 1	-	-	-	-	281	-
Stage 2	-	-	-	-	274	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	0	0	-	493	758
Stage 1	-	0	0	-	767	-
Stage 2	-	0	0	-	772	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	493	758
Mov Cap-2 Maneuver	-	-	-	-	493	-
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	772	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	805	-	-
HCM Lane V/C Ratio	0.044	-	-
HCM Control Delay (s)	9.7	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-

Intersection	
Int Delay, s/veh	21.2

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	228	3	180	0	396	58	148	311	0
Future Vol, veh/h	0	0	0	228	3	180	0	396	58	148	311	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	-	-	-	265	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	50	9	0	2	10	6	1	0
Mvmt Flow	0	0	0	240	3	189	0	440	64	164	346	0

Major/Minor	Minor2		Major1			Major2			
Conflicting Flow All	894	1178	173	-	0	0	504	0	0
Stage 1	674	674	-	-	-	-	-	-	-
Stage 2	220	504	-	-	-	-	-	-	-
Critical Hdwy	6.84	7.5	7.08	-	-	-	4.22	-	-
Critical Hdwy Stg 1	5.84	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.5	3.39	-	-	-	2.26	-	-
Pot Cap-1 Maneuver	281	131	819	0	-	-	1029	-	0
Stage 1	468	351	-	0	-	-	-	-	0
Stage 2	795	434	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	~ 236	0	819	-	-	-	1029	-	-
Mov Cap-2 Maneuver	~ 236	0	-	-	-	-	-	-	-
Stage 1	468	0	-	-	-	-	-	-	-
Stage 2	669	0	-	-	-	-	-	-	-

Approach	SB	NE	SW
HCM Control Delay, s	67.4	0	3
HCM LOS	F		

Minor Lane/Major Mvmt	NET	NER	SBLn1	SBLn2	SWL	SWT
Capacity (veh/h)	-	-	236	819	1029	-
HCM Lane V/C Ratio	-	-	1.03	0.231	0.16	-
HCM Control Delay (s)	-	-	111.5	10.7	9.2	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	10	0.9	0.6	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	7	1	165	131	493	0	0	452	206
Future Vol, veh/h	0	0	0	7	1	165	131	493	0	0	452	206
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	130	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	0	0	4	1	3	0	0	3	4
Mvmt Flow	0	0	0	7	1	174	146	548	0	0	502	229

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	1091	1571	274	731	0	-	-	-	0
Stage 1	840	840	-	-	-	-	-	-	-
Stage 2	251	731	-	-	-	-	-	-	-
Critical Hdwy	6.8	6.5	6.98	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.8	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.8	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.34	2.21	-	-	-	-	-
Pot Cap-1 Maneuver	213	112	718	876	-	0	0	-	-
Stage 1	389	384	-	-	-	0	0	-	-
Stage 2	774	430	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	177	0	718	876	-	-	-	-	-
Mov Cap-2 Maneuver	177	0	-	-	-	-	-	-	-
Stage 1	324	0	-	-	-	-	-	-	-
Stage 2	774	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	12.3	2.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NWLn1	NWLn2	SWT	SWR
Capacity (veh/h)	876	-	177	718	-	-
HCM Lane V/C Ratio	0.166	-	0.048	0.242	-	-
HCM Control Delay (s)	9.9	-	26.4	11.6	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.6	-	0.1	0.9	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	92	42	39	98	26	219	72	351	119	234	516	42
Future Volume (veh/h)	92	42	39	98	26	219	72	351	119	234	516	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1900	1885	1900	1856	1870	1900	1870	1900
Adj Flow Rate, veh/h	108	49	46	109	29	0	80	390	132	260	573	47
Peak Hour Factor	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	2	0	1	0	3	2	0	2	0
Cap, veh/h	264	86	65	354	78		269	601	201	323	870	71
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.00	0.15	0.23	0.23	0.18	0.26	0.26
Sat Flow, veh/h	793	495	378	1186	450	1598	1810	2595	867	1810	3326	272
Grp Volume(v), veh/h	203	0	0	138	0	0	80	263	259	260	306	314
Grp Sat Flow(s),veh/h/ln	1666	0	0	1636	0	1598	1810	1763	1699	1810	1777	1821
Q Serve(g_s), s	1.7	0.0	0.0	0.0	0.0	0.0	1.7	5.9	6.0	6.0	6.7	6.7
Cycle Q Clear(g_c), s	4.8	0.0	0.0	3.0	0.0	0.0	1.7	5.9	6.0	6.0	6.7	6.7
Prop In Lane	0.53		0.23	0.79		1.00	1.00		0.51	1.00		0.15
Lane Grp Cap(c), veh/h	415	0	0	432	0		269	409	394	323	465	477
V/C Ratio(X)	0.49	0.00	0.00	0.32	0.00		0.30	0.64	0.66	0.81	0.66	0.66
Avail Cap(c_a), veh/h	856	0	0	811	0		296	743	716	392	843	864
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	0.0	0.0	16.1	0.0	0.0	16.5	15.1	15.1	17.1	14.3	14.3
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.4	0.0	0.0	0.6	1.7	1.9	9.8	1.6	1.6
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0	0.9	0.0	0.0	0.6	2.0	1.9	2.8	2.2	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.6	0.0	0.0	16.5	0.0	0.0	17.1	16.8	17.0	26.9	15.9	15.9
LnGrp LOS	B	A	A	B	A		B	B	B	C	B	B
Approach Vol, veh/h		203			138	A		602			880	
Approach Delay, s/veh		17.6			16.5			16.9			19.1	
Approach LOS		B			B			B			B	

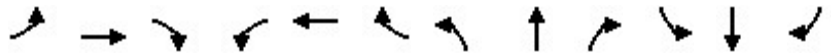
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.6	16.0		13.8	12.4	17.3		13.8				
Change Period (Y+Rc), s	* 5.9	* 5.9		* 6.3	* 5.9	* 5.9		* 6.3				
Max Green Setting (Gmax), s	* 9.4	* 18		* 20	* 7.1	* 21		* 19				
Max Q Clear Time (g_c+I1), s	8.0	8.0		6.8	3.7	8.7		5.0				
Green Ext Time (p_c), s	0.1	2.1		0.9	0.0	2.7		0.5				

Intersection Summary		
HCM 6th Ctrl Delay		18.0
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	29	202	142	41	29	211	569	111	33	599	88
Future Volume (veh/h)	47	29	202	142	41	29	211	569	111	33	599	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1870	1870	1900	1885	1900
Adj Flow Rate, veh/h	52	32	0	158	46	32	234	632	123	37	666	98
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	1	2	2	0	1	0
Cap, veh/h	178	84		348	67	314	290	1204	234	73	891	131
Arrive On Green	0.20	0.20	0.00	0.20	0.20	0.20	0.16	0.41	0.41	0.04	0.28	0.28
Sat Flow, veh/h	307	430	0	1122	341	1610	1795	2967	576	1810	3133	460
Grp Volume(v), veh/h	84	0	0	204	0	32	234	378	377	37	380	384
Grp Sat Flow(s),veh/h/ln	737	0	0	1463	0	1610	1795	1777	1767	1810	1791	1802
Q Serve(g_s), s	1.1	0.0	0.0	0.0	0.0	0.8	6.2	7.9	8.0	1.0	9.5	9.5
Cycle Q Clear(g_c), s	7.6	0.0	0.0	6.5	0.0	0.8	6.2	7.9	8.0	1.0	9.5	9.5
Prop In Lane	0.62		0.00	0.77		1.00	1.00		0.33	1.00		0.26
Lane Grp Cap(c), veh/h	262	0		415	0	314	290	721	717	73	509	512
V/C Ratio(X)	0.32	0.00		0.49	0.00	0.10	0.81	0.52	0.53	0.51	0.75	0.75
Avail Cap(c_a), veh/h	540	0		692	0	614	364	850	845	183	675	680
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	0.0	0.0	18.6	0.0	16.3	19.9	11.1	11.1	23.2	16.0	16.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.9	0.0	0.1	10.1	0.6	0.6	5.4	3.2	3.2
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	2.0	0.0	0.3	2.9	2.3	2.3	0.5	3.5	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.2	0.0	0.0	19.5	0.0	16.4	30.1	11.7	11.7	28.5	19.2	19.3
LnGrp LOS	B	A		B	A	B	C	B	B	C	B	B
Approach Vol, veh/h		84	A		236			989			801	
Approach Delay, s/veh		19.2			19.1			16.0			19.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.0	26.0		15.3	14.0	20.0		15.3
Change Period (Y+Rc), s	* 6	* 6		* 5.7	* 6	* 6		* 5.7
Max Green Setting (Gmax), s	* 5	* 24		* 19	* 10	* 19		* 19
Max Q Clear Time (g_c+I1), s	3.0	10.0		9.6	8.2	11.5		8.5
Green Ext Time (p_c), s	0.0	3.6		0.2	0.1	2.5		0.9

Intersection Summary	
HCM 6th Ctrl Delay	17.9
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	32	250	32	5	299	35	48	23	10	18	26	26
Future Vol, veh/h	32	250	32	5	299	35	48	23	10	18	26	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	2	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	36	278	36	6	332	39	53	26	11	20	29	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	371	0	0	314	0	0	761	751	296	751	750	352
Stage 1	-	-	-	-	-	-	368	368	-	364	364	-
Stage 2	-	-	-	-	-	-	393	383	-	387	386	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1199	-	-	1258	-	-	325	342	748	330	342	696
Stage 1	-	-	-	-	-	-	656	625	-	659	627	-
Stage 2	-	-	-	-	-	-	636	616	-	641	614	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1199	-	-	1258	-	-	281	327	748	296	327	696
Mov Cap-2 Maneuver	-	-	-	-	-	-	281	327	-	296	327	-
Stage 1	-	-	-	-	-	-	632	602	-	635	623	-
Stage 2	-	-	-	-	-	-	578	612	-	582	591	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.1	20.7	16.4
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	318	1199	-	-	1258	-	-	394
HCM Lane V/C Ratio	0.283	0.03	-	-	0.004	-	-	0.197
HCM Control Delay (s)	20.7	8.1	0	-	7.9	0	-	16.4
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.1	0.1	-	-	0	-	-	0.7

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	147	3	6	179	0	9
Future Vol, veh/h	147	3	6	179	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	85	85
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	163	3	7	199	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	166	0	378	165
Stage 1	-	-	-	-	165	-
Stage 2	-	-	-	-	213	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1424	-	628	885
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	827	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1424	-	624	885
Mov Cap-2 Maneuver	-	-	-	-	624	-
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	822	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	885	-	-	1424	-
HCM Lane V/C Ratio	0.012	-	-	0.005	-
HCM Control Delay (s)	9.1	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

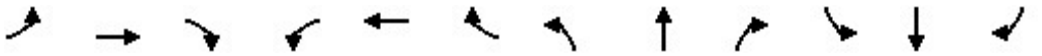
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	58	53	592	662	12
Future Vol, veh/h	8	58	53	592	662	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	90	90	90	90
Heavy Vehicles, %	0	0	0	2	2	0
Mvmt Flow	9	68	59	658	736	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1190	375	749	0	-	0
Stage 1	743	-	-	-	-	-
Stage 2	447	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	183	628	869	-	-	-
Stage 1	436	-	-	-	-	-
Stage 2	617	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	163	628	869	-	-	-
Mov Cap-2 Maneuver	163	-	-	-	-	-
Stage 1	389	-	-	-	-	-
Stage 2	617	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.2	1.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	869	-	467	-	-
HCM Lane V/C Ratio	0.068	-	0.166	-	-
HCM Control Delay (s)	9.4	0.4	14.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	14	48	110	11	45	29	485	86	45	516	39
Future Volume (veh/h)	48	14	48	110	11	45	29	485	86	45	516	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1796	1900	1900	1737	1900	1870	1900	1900	1870	1900
Adj Flow Rate, veh/h	56	16	56	129	13	53	32	539	96	50	573	43
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	7	0	0	11	0	2	0	0	2	0
Cap, veh/h	244	61	123	338	21	71	69	869	154	99	1021	77
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.04	0.29	0.29	0.05	0.30	0.30
Sat Flow, veh/h	598	375	756	1031	131	434	1810	3016	535	1810	3351	251
Grp Volume(v), veh/h	128	0	0	195	0	0	32	317	318	50	303	313
Grp Sat Flow(s),veh/h/ln	1729	0	0	1596	0	0	1810	1777	1774	1810	1777	1825
Q Serve(g_s), s	0.0	0.0	0.0	1.7	0.0	0.0	0.6	5.4	5.5	0.9	5.0	5.1
Cycle Q Clear(g_c), s	2.2	0.0	0.0	3.9	0.0	0.0	0.6	5.4	5.5	0.9	5.0	5.1
Prop In Lane	0.44		0.44	0.66		0.27	1.00		0.30	1.00		0.14
Lane Grp Cap(c), veh/h	429	0	0	430	0	0	69	512	511	99	542	556
V/C Ratio(X)	0.30	0.00	0.00	0.45	0.00	0.00	0.46	0.62	0.62	0.50	0.56	0.56
Avail Cap(c_a), veh/h	965	0	0	940	0	0	272	934	932	303	964	990
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.3	0.0	0.0	13.9	0.0	0.0	16.6	10.9	10.9	16.2	10.3	10.3
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.7	0.0	0.0	4.8	1.2	1.2	3.9	0.9	0.9
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	1.2	0.0	0.0	0.3	1.5	1.5	0.4	1.3	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.7	0.0	0.0	14.6	0.0	0.0	21.3	12.1	12.1	20.1	11.2	11.2
LnGrp LOS	B	A	A	B	A	A	C	B	B	C	B	B
Approach Vol, veh/h		128			195			667			666	
Approach Delay, s/veh		13.7			14.6			12.5			11.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.6	15.8		11.7	7.0	16.4		11.7				
Change Period (Y+Rc), s	* 5.7	* 5.7		6.0	* 5.7	* 5.7		6.0				
Max Green Setting (Gmax), s	* 5.9	* 19		18.2	* 5.3	* 19		18.2				
Max Q Clear Time (g_c+I1), s	2.9	7.5		4.2	2.6	7.1		5.9				
Green Ext Time (p_c), s	0.0	2.7		0.5	0.0	2.7		0.8				

Intersection Summary		
HCM 6th Ctrl Delay	12.6	
HCM 6th LOS	B	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↾	
Traffic Vol, veh/h	219	0	0	254	1	25
Future Vol, veh/h	219	0	0	254	1	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Yield
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	243	0	0	282	1	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	525	243
Stage 1	-	-	-	-	243	-
Stage 2	-	-	-	-	282	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	0	0	-	513	796
Stage 1	-	0	0	-	797	-
Stage 2	-	0	0	-	766	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	513	796
Mov Cap-2 Maneuver	-	-	-	-	513	-
Stage 1	-	-	-	-	797	-
Stage 2	-	-	-	-	766	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	828	-	-
HCM Lane V/C Ratio	0.033	-	-
HCM Control Delay (s)	9.5	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-

Intersection	
Int Delay, s/veh	11.2

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	171	0	170	0	407	25	147	272	0
Future Vol, veh/h	0	0	0	171	0	170	0	407	25	147	272	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	-	-	-	265	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	17	0	8	0	4	31	12	8	0
Mvmt Flow	0	0	0	180	0	179	0	452	28	163	302	0

Major/Minor	Minor2		Major1			Major2			
Conflicting Flow All	854	1108	151	-	0	0	480	0	0
Stage 1	628	628	-	-	-	-	-	-	-
Stage 2	226	480	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.5	7.06	-	-	-	4.34	-	-
Critical Hdwy Stg 1	6.14	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4	3.38	-	-	-	2.32	-	-
Pot Cap-1 Maneuver	270	212	850	0	-	-	1011	-	0
Stage 1	455	479	-	0	-	-	-	-	0
Stage 2	747	558	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	227	0	850	-	-	-	1011	-	-
Mov Cap-2 Maneuver	227	0	-	-	-	-	-	-	-
Stage 1	455	0	-	-	-	-	-	-	-
Stage 2	627	0	-	-	-	-	-	-	-

Approach	SB	NE	SW
HCM Control Delay, s	36.7	0	3.2
HCM LOS	E		

Minor Lane/Major Mvmt	NET	NER	SBLn1	SBLn2	SWL	SWT
Capacity (veh/h)	-	-	227	850	1011	-
HCM Lane V/C Ratio	-	-	0.793	0.211	0.162	-
HCM Control Delay (s)	-	-	62.8	10.4	9.2	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	5.8	0.8	0.6	-

Intersection	
Int Delay, s/veh	2.9

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	8	0	199	157	421	0	0	411	248
Future Vol, veh/h	0	0	0	8	0	199	157	421	0	0	411	248
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	130	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	67	0	14	6	7	0	0	8	7
Mvmt Flow	0	0	0	8	0	209	174	468	0	0	457	276

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	1045	1549	234	733	0	-	-	-	0
Stage 1	816	816	-	-	-	-	-	-	-
Stage 2	229	733	-	-	-	-	-	-	-
Critical Hdwy	8.14	6.5	7.18	4.22	-	-	-	-	-
Critical Hdwy Stg 1	7.14	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.14	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.17	4	3.44	2.26	-	-	-	-	-
Pot Cap-1 Maneuver	140	115	732	842	-	0	0	-	-
Stage 1	265	393	-	-	-	0	0	-	-
Stage 2	624	429	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	111	0	732	842	-	-	-	-	-
Mov Cap-2 Maneuver	111	0	-	-	-	-	-	-	-
Stage 1	210	0	-	-	-	-	-	-	-
Stage 2	624	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	13	2.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NWLn1	NWLn2	SWT	SWR
Capacity (veh/h)	842	-	111	732	-	-
HCM Lane V/C Ratio	0.207	-	0.076	0.286	-	-
HCM Control Delay (s)	10.4	-	40.1	11.9	-	-
HCM Lane LOS	B	-	E	B	-	-
HCM 95th %tile Q(veh)	0.8	-	0.2	1.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	66	21	35	92	78	198	41	450	66	231	535	96
Future Volume (veh/h)	66	21	35	92	78	198	41	450	66	231	535	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1781	1263	1826	1900	1900	1574	1767	1796	1841	1781	1900
Adj Flow Rate, veh/h	78	25	41	102	87	0	46	500	73	257	594	107
Peak Hour Factor	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	8	43	5	0	0	22	9	7	4	8	0
Cap, veh/h	240	64	71	259	134		73	735	107	324	1107	199
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.00	0.05	0.25	0.25	0.19	0.39	0.39
Sat Flow, veh/h	736	411	456	854	853	1610	1499	2940	428	1753	2866	515
Grp Volume(v), veh/h	144	0	0	189	0	0	46	284	289	257	350	351
Grp Sat Flow(s),veh/h/ln	1603	0	0	1707	0	1610	1499	1678	1690	1753	1692	1689
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.0	0.0	1.3	6.8	6.8	6.2	7.1	7.1
Cycle Q Clear(g_c), s	3.4	0.0	0.0	4.4	0.0	0.0	1.3	6.8	6.8	6.2	7.1	7.1
Prop In Lane	0.54		0.28	0.54		1.00	1.00		0.25	1.00		0.30
Lane Grp Cap(c), veh/h	376	0	0	392	0		73	419	422	324	653	652
V/C Ratio(X)	0.38	0.00	0.00	0.48	0.00		0.63	0.68	0.68	0.79	0.54	0.54
Avail Cap(c_a), veh/h	782	0	0	825	0		240	704	709	558	978	976
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	0.0	0.0	17.6	0.0	0.0	20.7	15.0	15.0	17.2	10.5	10.5
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.9	0.0	0.0	8.6	1.9	2.0	4.4	0.7	0.7
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	1.4	0.0	0.0	0.6	2.2	2.2	2.3	1.9	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.8	0.0	0.0	18.5	0.0	0.0	29.3	16.9	17.0	21.6	11.2	11.2
LnGrp LOS	B	A	A	B	A		C	B	B	C	B	B
Approach Vol, veh/h		144			189	A		619			958	
Approach Delay, s/veh		17.8			18.5			17.9			14.0	
Approach LOS		B			B			B			B	

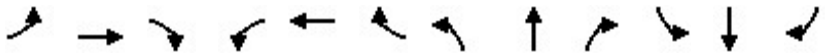
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.1	17.0		13.2	8.1	23.0		13.2				
Change Period (Y+Rc), s	* 5.9	* 5.9		* 6.3	* 5.9	* 5.9		* 6.3				
Max Green Setting (Gmax), s	* 14	* 19		* 20	* 7.1	* 26		* 19				
Max Q Clear Time (g_c+I1), s	8.2	8.8		5.4	3.3	9.1		6.4				
Green Ext Time (p_c), s	0.4	2.2		0.6	0.0	3.6		0.6				

Intersection Summary		
HCM 6th Ctrl Delay		16.0
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	29	247	110	45	54	183	459	89	25	549	60
Future Volume (veh/h)	64	29	247	110	45	54	183	459	89	25	549	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1796	1900	1900	1796	1900	1796	1811	1856	1900
Adj Flow Rate, veh/h	71	32	0	122	50	60	203	510	99	28	610	67
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	7	0	0	7	0	7	6	3	0
Cap, veh/h	223	77		331	101	295	255	1168	226	56	867	95
Arrive On Green	0.18	0.18	0.00	0.18	0.18	0.18	0.15	0.39	0.39	0.03	0.27	0.27
Sat Flow, veh/h	487	423	0	1071	554	1610	1711	3017	583	1725	3204	351
Grp Volume(v), veh/h	103	0	0	172	0	60	203	304	305	28	335	342
Grp Sat Flow(s),veh/h/ln	910	0	0	1625	0	1610	1711	1805	1795	1725	1763	1792
Q Serve(g_s), s	1.9	0.0	0.0	0.0	0.0	1.4	5.2	5.7	5.7	0.7	7.8	7.8
Cycle Q Clear(g_c), s	6.2	0.0	0.0	4.3	0.0	1.4	5.2	5.7	5.7	0.7	7.8	7.8
Prop In Lane	0.69		0.00	0.71		1.00	1.00		0.32	1.00		0.20
Lane Grp Cap(c), veh/h	300	0		433	0	295	255	699	695	56	477	485
V/C Ratio(X)	0.34	0.00		0.40	0.00	0.20	0.80	0.44	0.44	0.50	0.70	0.70
Avail Cap(c_a), veh/h	628	0		780	0	664	375	918	913	189	719	731
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.0	0.0	0.0	16.9	0.0	15.8	18.7	10.3	10.3	21.7	15.0	15.0
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.6	0.0	0.3	7.1	0.4	0.4	6.6	1.9	1.9
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	1.5	0.0	0.5	2.2	1.6	1.6	0.4	2.6	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.7	0.0	0.0	17.5	0.0	16.1	25.9	10.7	10.8	28.3	16.9	16.9
LnGrp LOS	B	A		B	A	B	C	B	B	C	B	B
Approach Vol, veh/h		103	A		232			812			705	
Approach Delay, s/veh		18.7			17.2			14.5			17.3	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.5	24.0		14.1	12.8	18.7		14.1
Change Period (Y+Rc), s	* 6	* 6.4		* 5.7	* 6	* 6.4		* 5.7
Max Green Setting (Gmax), s	* 5	* 23		* 19	* 10	* 19		* 19
Max Q Clear Time (g_c+I1), s	2.7	7.7		8.2	7.2	9.8		6.3
Green Ext Time (p_c), s	0.0	3.0		0.3	0.1	2.5		0.9

Intersection Summary		
HCM 6th Ctrl Delay	16.2	
HCM 6th LOS	B	

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	24	330	33	2	272	14	32	11	5	5	15	20
Future Vol, veh/h	24	330	33	2	272	14	32	11	5	5	15	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	85	85	85	85	85	85
Heavy Vehicles, %	0	8	0	0	4	0	6	0	0	0	0	0
Mvmt Flow	27	367	37	2	302	16	38	13	6	6	18	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	318	0	0	404	0	0	775	762	386	763	772	310
Stage 1	-	-	-	-	-	-	440	440	-	314	314	-
Stage 2	-	-	-	-	-	-	335	322	-	449	458	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.16	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.554	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1253	-	-	1166	-	-	310	337	666	324	333	735
Stage 1	-	-	-	-	-	-	588	581	-	701	660	-
Stage 2	-	-	-	-	-	-	671	655	-	593	570	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1253	-	-	1166	-	-	281	327	666	304	323	735
Mov Cap-2 Maneuver	-	-	-	-	-	-	281	327	-	304	323	-
Stage 1	-	-	-	-	-	-	572	565	-	681	659	-
Stage 2	-	-	-	-	-	-	631	654	-	558	554	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.1	19.2	14.1
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	310	1253	-	-	1166	-	-	444
HCM Lane V/C Ratio	0.182	0.021	-	-	0.002	-	-	0.106
HCM Control Delay (s)	19.2	7.9	0	-	8.1	0	-	14.1
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0.1	-	-	0	-	-	0.4

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	171	8	8	144	6	8
Future Vol, veh/h	171	8	8	144	6	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	85	85
Heavy Vehicles, %	7	0	0	6	0	0
Mvmt Flow	190	9	9	160	7	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	199	0	373	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	178	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1385	-	632	851
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	858	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1385	-	628	851
Mov Cap-2 Maneuver	-	-	-	-	628	-
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	852	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	739	-	-	1385	-
HCM Lane V/C Ratio	0.022	-	-	0.006	-
HCM Control Delay (s)	10	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

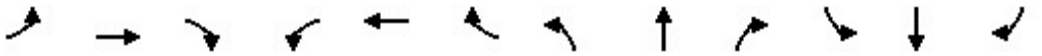
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	21	14	563	613	18
Future Vol, veh/h	3	21	14	563	613	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	90	90	90	90
Heavy Vehicles, %	0	0	0	0	3	0
Mvmt Flow	4	25	16	626	681	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1036	351	701	0	-	0
Stage 1	691	-	-	-	-	-
Stage 2	345	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	231	651	905	-	-	-
Stage 1	464	-	-	-	-	-
Stage 2	694	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	225	651	905	-	-	-
Mov Cap-2 Maneuver	225	-	-	-	-	-
Stage 1	451	-	-	-	-	-
Stage 2	694	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.2	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	905	-	526	-	-
HCM Lane V/C Ratio	0.017	-	0.054	-	-
HCM Control Delay (s)	9	0.1	12.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	0	6	83	2	29	19	520	27	14	542	34
Future Volume (veh/h)	42	0	6	83	2	29	19	520	27	14	542	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	907	1900	1900	1900	1900	1885	1900	1900	1856	1604
Adj Flow Rate, veh/h	49	0	7	98	2	34	21	578	30	16	602	38
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	67	0	0	0	0	1	0	0	3	20
Cap, veh/h	380	14	27	337	3	50	48	1066	55	37	1017	64
Arrive On Green	0.13	0.00	0.13	0.13	0.13	0.13	0.03	0.31	0.31	0.02	0.30	0.30
Sat Flow, veh/h	1353	112	209	1137	23	395	1810	3464	180	1810	3368	212
Grp Volume(v), veh/h	56	0	0	134	0	0	21	298	310	16	315	325
Grp Sat Flow(s),veh/h/ln	1674	0	0	1555	0	0	1810	1791	1853	1810	1763	1817
Q Serve(g_s), s	0.0	0.0	0.0	1.7	0.0	0.0	0.4	4.5	4.5	0.3	4.9	4.9
Cycle Q Clear(g_c), s	0.9	0.0	0.0	2.6	0.0	0.0	0.4	4.5	4.5	0.3	4.9	4.9
Prop In Lane	0.87		0.12	0.73		0.25	1.00		0.10	1.00		0.12
Lane Grp Cap(c), veh/h	421	0	0	390	0	0	48	551	570	37	532	549
V/C Ratio(X)	0.13	0.00	0.00	0.34	0.00	0.00	0.44	0.54	0.54	0.43	0.59	0.59
Avail Cap(c_a), veh/h	1040	0	0	1026	0	0	280	1076	1113	280	1059	1092
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.7	0.0	0.0	13.4	0.0	0.0	15.5	9.3	9.3	15.6	9.6	9.6
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.5	0.0	0.0	6.1	0.8	0.8	7.5	1.1	1.0
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.8	0.0	0.0	0.2	1.1	1.1	0.2	1.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.8	0.0	0.0	13.9	0.0	0.0	21.6	10.1	10.1	23.1	10.6	10.6
LnGrp LOS	B	A	A	B	A	A	C	B	B	C	B	B
Approach Vol, veh/h		56			134			629			656	
Approach Delay, s/veh		12.8			13.9			10.5			10.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	15.6		10.3	6.6	15.5		10.3				
Change Period (Y+Rc), s	* 5.7	* 5.7		* 6.2	* 5.7	* 5.7		* 6.2				
Max Green Setting (Gmax), s	* 5	* 19		* 18	* 5	* 19		* 18				
Max Q Clear Time (g_c+I1), s	2.3	6.5		2.9	2.4	6.9		4.6				
Green Ext Time (p_c), s	0.0	2.7		0.2	0.0	2.8		0.5				

Intersection Summary		
HCM 6th Ctrl Delay		11.1
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↱	
Traffic Vol, veh/h	253	0	0	246	3	40
Future Vol, veh/h	253	0	0	246	3	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Yield
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	281	0	0	273	3	42

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	554	281
Stage 1	-	-	-	-	281	-
Stage 2	-	-	-	-	273	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	0	0	-	493	758
Stage 1	-	0	0	-	767	-
Stage 2	-	0	0	-	773	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	493	758
Mov Cap-2 Maneuver	-	-	-	-	493	-
Stage 1	-	-	-	-	767	-
Stage 2	-	-	-	-	773	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	815	-	-
HCM Lane V/C Ratio	0.056	-	-
HCM Control Delay (s)	9.7	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-

Intersection	
Int Delay, s/veh	21.2

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	228	3	180	0	396	58	148	311	0
Future Vol, veh/h	0	0	0	228	3	180	0	396	58	148	311	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	-	-	-	265	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	50	9	0	2	10	6	1	0
Mvmt Flow	0	0	0	240	3	189	0	440	64	164	346	0

Major/Minor	Minor2		Major1			Major2			
Conflicting Flow All	894	1178	173	-	0	0	504	0	0
Stage 1	674	674	-	-	-	-	-	-	-
Stage 2	220	504	-	-	-	-	-	-	-
Critical Hdwy	6.84	7.5	7.08	-	-	-	4.22	-	-
Critical Hdwy Stg 1	5.84	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.5	3.39	-	-	-	2.26	-	-
Pot Cap-1 Maneuver	281	131	819	0	-	-	1029	-	0
Stage 1	468	351	-	0	-	-	-	-	0
Stage 2	795	434	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	~ 236	0	819	-	-	-	1029	-	-
Mov Cap-2 Maneuver	~ 236	0	-	-	-	-	-	-	-
Stage 1	468	0	-	-	-	-	-	-	-
Stage 2	669	0	-	-	-	-	-	-	-

Approach	SB	NE	SW
HCM Control Delay, s	67.4	0	3
HCM LOS	F		

Minor Lane/Major Mvmt	NET	NER	SBLn1	SBLn2	SWL	SWT
Capacity (veh/h)	-	-	236	819	1029	-
HCM Lane V/C Ratio	-	-	1.03	0.231	0.16	-
HCM Control Delay (s)	-	-	111.5	10.7	9.2	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	10	0.9	0.6	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	7	1	165	131	493	0	0	452	206
Future Vol, veh/h	0	0	0	7	1	165	131	493	0	0	452	206
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	130	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	0	0	4	1	3	0	0	3	4
Mvmt Flow	0	0	0	7	1	174	146	548	0	0	502	229

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	1091	1571	274	731	0	-	-	-	0
Stage 1	840	840	-	-	-	-	-	-	-
Stage 2	251	731	-	-	-	-	-	-	-
Critical Hdwy	6.8	6.5	6.98	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.8	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.8	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.34	2.21	-	-	-	-	-
Pot Cap-1 Maneuver	213	112	718	876	-	0	0	-	-
Stage 1	389	384	-	-	-	0	0	-	-
Stage 2	774	430	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	177	0	718	876	-	-	-	-	-
Mov Cap-2 Maneuver	177	0	-	-	-	-	-	-	-
Stage 1	324	0	-	-	-	-	-	-	-
Stage 2	774	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	12.3	2.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NWLn1	NWLn2	SWT	SWR
Capacity (veh/h)	876	-	177	718	-	-
HCM Lane V/C Ratio	0.166	-	0.048	0.242	-	-
HCM Control Delay (s)	9.9	-	26.4	11.6	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.6	-	0.1	0.9	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	92	42	39	98	26	219	72	351	119	234	516	42
Future Volume (veh/h)	92	42	39	98	26	219	72	351	119	234	516	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1900	1885	1900	1856	1870	1900	1870	1900
Adj Flow Rate, veh/h	108	49	46	109	29	0	80	390	132	260	573	47
Peak Hour Factor	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	2	0	1	0	3	2	0	2	0
Cap, veh/h	264	86	65	354	78		269	601	201	323	870	71
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.00	0.15	0.23	0.23	0.18	0.26	0.26
Sat Flow, veh/h	793	495	378	1186	450	1598	1810	2595	867	1810	3326	272
Grp Volume(v), veh/h	203	0	0	138	0	0	80	263	259	260	306	314
Grp Sat Flow(s),veh/h/ln	1666	0	0	1636	0	1598	1810	1763	1699	1810	1777	1821
Q Serve(g_s), s	1.7	0.0	0.0	0.0	0.0	0.0	1.7	5.9	6.0	6.0	6.7	6.7
Cycle Q Clear(g_c), s	4.8	0.0	0.0	3.0	0.0	0.0	1.7	5.9	6.0	6.0	6.7	6.7
Prop In Lane	0.53		0.23	0.79		1.00	1.00		0.51	1.00		0.15
Lane Grp Cap(c), veh/h	415	0	0	432	0		269	409	394	323	465	477
V/C Ratio(X)	0.49	0.00	0.00	0.32	0.00		0.30	0.64	0.66	0.81	0.66	0.66
Avail Cap(c_a), veh/h	856	0	0	811	0		296	743	716	392	843	864
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	0.0	0.0	16.1	0.0	0.0	16.5	15.1	15.1	17.1	14.3	14.3
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.4	0.0	0.0	0.6	1.7	1.9	9.8	1.6	1.6
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0	0.9	0.0	0.0	0.6	2.0	1.9	2.8	2.2	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.6	0.0	0.0	16.5	0.0	0.0	17.1	16.8	17.0	26.9	15.9	15.9
LnGrp LOS	B	A	A	B	A		B	B	B	C	B	B
Approach Vol, veh/h		203			138	A		602			880	
Approach Delay, s/veh		17.6			16.5			16.9			19.1	
Approach LOS		B			B			B			B	

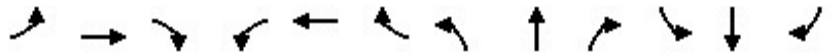
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.6	16.0		13.8	12.4	17.3		13.8				
Change Period (Y+Rc), s	* 5.9	* 5.9		* 6.3	* 5.9	* 5.9		* 6.3				
Max Green Setting (Gmax), s	* 9.4	* 18		* 20	* 7.1	* 21		* 19				
Max Q Clear Time (g_c+I1), s	8.0	8.0		6.8	3.7	8.7		5.0				
Green Ext Time (p_c), s	0.1	2.1		0.9	0.0	2.7		0.5				

Intersection Summary	
HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	29	206	142	41	29	211	569	111	32	593	88
Future Volume (veh/h)	49	29	206	142	41	29	211	569	111	32	593	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1870	1870	1900	1885	1900
Adj Flow Rate, veh/h	54	32	0	158	46	32	234	632	123	36	659	98
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	1	2	2	0	1	0
Cap, veh/h	182	83		351	68	317	290	1201	233	71	884	131
Arrive On Green	0.20	0.20	0.00	0.20	0.20	0.20	0.16	0.40	0.40	0.04	0.28	0.28
Sat Flow, veh/h	321	420	0	1123	345	1610	1795	2967	576	1810	3128	465
Grp Volume(v), veh/h	86	0	0	204	0	32	234	378	377	36	377	380
Grp Sat Flow(s),veh/h/ln	741	0	0	1468	0	1610	1795	1777	1767	1810	1791	1802
Q Serve(g_s), s	1.2	0.0	0.0	0.0	0.0	0.8	6.2	7.9	8.0	1.0	9.4	9.5
Cycle Q Clear(g_c), s	7.6	0.0	0.0	6.4	0.0	0.8	6.2	7.9	8.0	1.0	9.4	9.5
Prop In Lane	0.63		0.00	0.77		1.00	1.00		0.33	1.00		0.26
Lane Grp Cap(c), veh/h	265	0		418	0	317	290	719	715	71	506	509
V/C Ratio(X)	0.33	0.00		0.49	0.00	0.10	0.81	0.53	0.53	0.50	0.74	0.75
Avail Cap(c_a), veh/h	540	0		693	0	614	364	850	845	183	676	680
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.7	0.0	0.0	18.5	0.0	16.2	19.9	11.1	11.1	23.2	16.1	16.1
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.9	0.0	0.1	10.1	0.6	0.6	5.4	3.1	3.1
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	2.0	0.0	0.3	2.9	2.3	2.3	0.5	3.4	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.4	0.0	0.0	19.4	0.0	16.4	30.1	11.7	11.7	28.6	19.2	19.2
LnGrp LOS	B	A		B	A	B	C	B	B	C	B	B
Approach Vol, veh/h		86	A		236			989			793	
Approach Delay, s/veh		19.4			18.9			16.0			19.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.9	26.0		15.4	14.0	19.9		15.4
Change Period (Y+Rc), s	* 6	* 6		* 5.7	* 6	* 6		* 5.7
Max Green Setting (Gmax), s	* 5	* 24		* 19	* 10	* 19		* 19
Max Q Clear Time (g_c+I1), s	3.0	10.0		9.6	8.2	11.5		8.4
Green Ext Time (p_c), s	0.0	3.6		0.2	0.1	2.5		0.9

Intersection Summary	
HCM 6th Ctrl Delay	17.9
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	32	256	32	5	299	36	48	23	10	18	26	26
Future Vol, veh/h	32	256	32	5	299	36	48	23	10	18	26	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	85	85	85	85	85	85
Heavy Vehicles, %	0	2	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	36	284	36	6	332	40	56	27	12	21	31	31

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	372	0	0	320	0	0	769	758	302	758	756	352
Stage 1	-	-	-	-	-	-	374	374	-	364	364	-
Stage 2	-	-	-	-	-	-	395	384	-	394	392	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1198	-	-	1251	-	-	321	339	742	326	340	696
Stage 1	-	-	-	-	-	-	651	621	-	659	627	-
Stage 2	-	-	-	-	-	-	634	615	-	635	610	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1198	-	-	1251	-	-	276	324	742	291	325	696
Mov Cap-2 Maneuver	-	-	-	-	-	-	276	324	-	291	325	-
Stage 1	-	-	-	-	-	-	627	598	-	635	623	-
Stage 2	-	-	-	-	-	-	573	611	-	575	587	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.1	21.5	16.6
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	313	1198	-	-	1251	-	-	391
HCM Lane V/C Ratio	0.304	0.03	-	-	0.004	-	-	0.211
HCM Control Delay (s)	21.5	8.1	0	-	7.9	0	-	16.6
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.3	0.1	-	-	0	-	-	0.8

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	147	3	6	179	0	9
Future Vol, veh/h	147	3	6	179	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	85	85
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	163	3	7	199	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	166	0	378	165
Stage 1	-	-	-	-	165	-
Stage 2	-	-	-	-	213	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1424	-	628	885
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	827	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1424	-	624	885
Mov Cap-2 Maneuver	-	-	-	-	624	-
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	822	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	885	-	-	1424	-
HCM Lane V/C Ratio	0.012	-	-	0.005	-
HCM Control Delay (s)	9.1	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

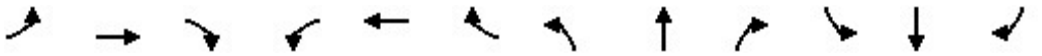
Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	58	54	593	656	12
Future Vol, veh/h	8	58	54	593	656	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	90	90	90	90
Heavy Vehicles, %	0	0	0	2	2	0
Mvmt Flow	9	68	60	659	729	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1186	371	742	0	-	0
Stage 1	736	-	-	-	-	-
Stage 2	450	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	184	632	874	-	-	-
Stage 1	440	-	-	-	-	-
Stage 2	615	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	164	632	874	-	-	-
Mov Cap-2 Maneuver	164	-	-	-	-	-
Stage 1	392	-	-	-	-	-
Stage 2	615	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.2	1.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	874	-	470	-	-
HCM Lane V/C Ratio	0.069	-	0.165	-	-
HCM Control Delay (s)	9.4	0.4	14.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	14	48	110	11	45	29	485	87	44	510	39
Future Volume (veh/h)	48	14	48	110	11	45	29	485	87	44	510	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1796	1900	1900	1737	1900	1870	1900	1900	1870	1900
Adj Flow Rate, veh/h	56	16	56	129	13	53	32	539	97	49	567	43
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	7	0	0	11	0	2	0	0	2	0
Cap, veh/h	244	61	123	338	21	71	69	869	156	98	1020	77
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.04	0.29	0.29	0.05	0.30	0.30
Sat Flow, veh/h	598	375	756	1031	131	434	1810	3010	540	1810	3348	253
Grp Volume(v), veh/h	128	0	0	195	0	0	32	317	319	49	300	310
Grp Sat Flow(s),veh/h/ln	1729	0	0	1596	0	0	1810	1777	1773	1810	1777	1825
Q Serve(g_s), s	0.0	0.0	0.0	1.7	0.0	0.0	0.6	5.4	5.5	0.9	5.0	5.0
Cycle Q Clear(g_c), s	2.2	0.0	0.0	3.9	0.0	0.0	0.6	5.4	5.5	0.9	5.0	5.0
Prop In Lane	0.44		0.44	0.66		0.27	1.00		0.30	1.00		0.14
Lane Grp Cap(c), veh/h	429	0	0	430	0	0	69	513	512	98	541	556
V/C Ratio(X)	0.30	0.00	0.00	0.45	0.00	0.00	0.46	0.62	0.62	0.50	0.55	0.56
Avail Cap(c_a), veh/h	965	0	0	940	0	0	272	939	937	298	964	990
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.3	0.0	0.0	13.9	0.0	0.0	16.6	10.8	10.9	16.2	10.2	10.2
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.7	0.0	0.0	4.8	1.2	1.2	3.9	0.9	0.9
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	1.2	0.0	0.0	0.3	1.5	1.5	0.4	1.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.7	0.0	0.0	14.6	0.0	0.0	21.3	12.1	12.1	20.1	11.1	11.1
LnGrp LOS	B	A	A	B	A	A	C	B	B	C	B	B
Approach Vol, veh/h		128			195			668			659	
Approach Delay, s/veh		13.7			14.6			12.5			11.8	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.6	15.9		11.7	7.0	16.4		11.7				
Change Period (Y+Rc), s	* 5.7	* 5.7		6.0	* 5.7	* 5.7		6.0				
Max Green Setting (Gmax), s	* 5.8	* 19		18.2	* 5.3	* 19		18.2				
Max Q Clear Time (g_c+I1), s	2.9	7.5		4.2	2.6	7.0		5.9				
Green Ext Time (p_c), s	0.0	2.7		0.5	0.0	2.6		0.8				

Intersection Summary	
HCM 6th Ctrl Delay	12.6
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↱	
Traffic Vol, veh/h	219	0	0	253	2	31
Future Vol, veh/h	219	0	0	253	2	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Yield
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	243	0	0	281	2	33

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	-	-	524	243
Stage 1	-	-	-	-	243	-
Stage 2	-	-	-	-	281	-
Critical Hdwy	-	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	0	0	-	514	796
Stage 1	-	0	0	-	797	-
Stage 2	-	0	0	-	767	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	-	-	514	796
Mov Cap-2 Maneuver	-	-	-	-	514	-
Stage 1	-	-	-	-	797	-
Stage 2	-	-	-	-	767	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	847	-	-
HCM Lane V/C Ratio	0.041	-	-
HCM Control Delay (s)	9.4	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-

Intersection	
Int Delay, s/veh	11.2

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	171	0	170	0	407	25	147	272	0
Future Vol, veh/h	0	0	0	171	0	170	0	407	25	147	272	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	-	-	-	265	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	17	0	8	0	4	31	12	8	0
Mvmt Flow	0	0	0	180	0	179	0	452	28	163	302	0

Major/Minor	Minor2		Major1			Major2			
Conflicting Flow All	854	1108	151	-	0	0	480	0	0
Stage 1	628	628	-	-	-	-	-	-	-
Stage 2	226	480	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.5	7.06	-	-	-	4.34	-	-
Critical Hdwy Stg 1	6.14	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4	3.38	-	-	-	2.32	-	-
Pot Cap-1 Maneuver	270	212	850	0	-	-	1011	-	0
Stage 1	455	479	-	0	-	-	-	-	0
Stage 2	747	558	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	227	0	850	-	-	-	1011	-	-
Mov Cap-2 Maneuver	227	0	-	-	-	-	-	-	-
Stage 1	455	0	-	-	-	-	-	-	-
Stage 2	627	0	-	-	-	-	-	-	-

Approach	SB	NE	SW
HCM Control Delay, s	36.7	0	3.2
HCM LOS	E		

Minor Lane/Major Mvmt	NET	NER	SBLn1	SBLn2	SWL	SWT
Capacity (veh/h)	-	-	227	850	1011	-
HCM Lane V/C Ratio	-	-	0.793	0.211	0.162	-
HCM Control Delay (s)	-	-	62.8	10.4	9.2	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	5.8	0.8	0.6	-

Intersection	
Int Delay, s/veh	3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	8	0	199	157	421	0	0	411	248
Future Vol, veh/h	0	0	0	8	0	199	157	421	0	0	411	248
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	130	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	67	0	14	6	7	0	0	8	7
Mvmt Flow	0	0	0	9	0	221	174	468	0	0	457	276

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	1045	1549	234	733	0	-	-	-	0
Stage 1	816	816	-	-	-	-	-	-	-
Stage 2	229	733	-	-	-	-	-	-	-
Critical Hdwy	8.14	6.5	7.18	4.22	-	-	-	-	-
Critical Hdwy Stg 1	7.14	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.14	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.17	4	3.44	2.26	-	-	-	-	-
Pot Cap-1 Maneuver	140	115	732	842	-	0	0	-	-
Stage 1	265	393	-	-	-	0	0	-	-
Stage 2	624	429	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	111	0	732	842	-	-	-	-	-
Mov Cap-2 Maneuver	111	0	-	-	-	-	-	-	-
Stage 1	210	0	-	-	-	-	-	-	-
Stage 2	624	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	13.1	2.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NWLn1	NWLn2	SWT	SWR
Capacity (veh/h)	842	-	111	732	-	-
HCM Lane V/C Ratio	0.207	-	0.08	0.302	-	-
HCM Control Delay (s)	10.4	-	40.2	12	-	-
HCM Lane LOS	B	-	E	B	-	-
HCM 95th %tile Q(veh)	0.8	-	0.3	1.3	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	66	21	35	92	78	198	41	450	66	231	535	96
Future Volume (veh/h)	66	21	35	92	78	198	41	450	66	231	535	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1781	1263	1826	1900	1900	1574	1767	1796	1841	1781	1900
Adj Flow Rate, veh/h	78	25	41	102	87	0	46	500	73	257	594	107
Peak Hour Factor	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	8	43	5	0	0	22	9	7	4	8	0
Cap, veh/h	240	64	71	259	134		73	735	107	324	1107	199
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.00	0.05	0.25	0.25	0.19	0.39	0.39
Sat Flow, veh/h	736	411	456	854	853	1610	1499	2940	428	1753	2866	515
Grp Volume(v), veh/h	144	0	0	189	0	0	46	284	289	257	350	351
Grp Sat Flow(s),veh/h/ln	1603	0	0	1707	0	1610	1499	1678	1690	1753	1692	1689
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.0	0.0	1.3	6.8	6.8	6.2	7.1	7.1
Cycle Q Clear(g_c), s	3.4	0.0	0.0	4.4	0.0	0.0	1.3	6.8	6.8	6.2	7.1	7.1
Prop In Lane	0.54		0.28	0.54		1.00	1.00		0.25	1.00		0.30
Lane Grp Cap(c), veh/h	376	0	0	392	0		73	420	422	324	654	652
V/C Ratio(X)	0.38	0.00	0.00	0.48	0.00		0.63	0.68	0.68	0.79	0.54	0.54
Avail Cap(c_a), veh/h	779	0	0	821	0		240	708	713	558	981	979
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	0.0	0.0	17.6	0.0	0.0	20.7	15.0	15.0	17.2	10.5	10.5
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.9	0.0	0.0	8.6	1.9	2.0	4.4	0.7	0.7
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	1.4	0.0	0.0	0.6	2.2	2.2	2.3	1.9	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.9	0.0	0.0	18.5	0.0	0.0	29.3	16.9	17.0	21.6	11.2	11.2
LnGrp LOS	B	A	A	B	A		C	B	B	C	B	B
Approach Vol, veh/h		144			189	A		619			958	
Approach Delay, s/veh		17.9			18.5			17.9			14.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.1	17.0		13.2	8.1	23.0		13.2				
Change Period (Y+Rc), s	* 5.9	* 5.9		* 6.3	* 5.9	* 5.9		* 6.3				
Max Green Setting (Gmax), s	* 14	* 19		* 20	* 7.1	* 26		* 19				
Max Q Clear Time (g_c+I1), s	8.2	8.8		5.4	3.3	9.1		6.4				
Green Ext Time (p_c), s	0.4	2.2		0.6	0.0	3.6		0.6				

Intersection Summary	
HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	31	310	110	53	46	247	394	89	23	489	54
Future Volume (veh/h)	58	31	310	110	53	46	247	394	89	23	489	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1796	1900	1900	1796	1900	1796	1811	1856	1900
Adj Flow Rate, veh/h	64	34	0	122	59	51	274	438	99	26	543	60
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	7	0	0	7	0	7	6	3	0
Cap, veh/h	204	84		312	109	293	336	1206	271	53	788	87
Arrive On Green	0.18	0.18	0.00	0.18	0.18	0.18	0.20	0.41	0.41	0.03	0.25	0.25
Sat Flow, veh/h	425	458	0	1010	599	1610	1711	2930	657	1725	3202	353
Grp Volume(v), veh/h	98	0	0	181	0	51	274	269	268	26	298	305
Grp Sat Flow(s),veh/h/ln	883	0	0	1609	0	1610	1711	1805	1782	1725	1763	1792
Q Serve(g_s), s	1.6	0.0	0.0	0.0	0.0	1.3	7.2	4.8	4.9	0.7	7.2	7.3
Cycle Q Clear(g_c), s	6.4	0.0	0.0	4.8	0.0	1.3	7.2	4.8	4.9	0.7	7.2	7.3
Prop In Lane	0.65		0.00	0.67		1.00	1.00		0.37	1.00		0.20
Lane Grp Cap(c), veh/h	287	0		421	0	293	336	743	734	53	434	441
V/C Ratio(X)	0.34	0.00		0.43	0.00	0.17	0.82	0.36	0.37	0.49	0.69	0.69
Avail Cap(c_a), veh/h	650	0		804	0	697	472	1034	1020	183	710	722
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.5	0.0	0.0	17.7	0.0	16.3	18.1	9.6	9.6	22.5	16.1	16.1
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.7	0.0	0.3	7.5	0.3	0.3	6.9	1.9	1.9
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	1.7	0.0	0.4	3.0	1.4	1.4	0.3	2.5	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.2	0.0	0.0	18.4	0.0	16.6	25.6	9.9	9.9	29.4	18.1	18.1
LnGrp LOS	B	A		B	A	B	C	A	A	C	B	B
Approach Vol, veh/h		98	A		232			811			629	
Approach Delay, s/veh		19.2			18.0			15.2			18.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.4	25.4		14.3	15.2	17.6		14.3
Change Period (Y+Rc), s	* 6	* 6		* 5.7	* 6	* 6		* 5.7
Max Green Setting (Gmax), s	* 5	* 27		* 20	* 13	* 19		* 20
Max Q Clear Time (g_c+I1), s	2.7	6.9		8.4	9.2	9.3		6.8
Green Ext Time (p_c), s	0.0	2.8		0.3	0.3	2.3		0.9

Intersection Summary	
HCM 6th Ctrl Delay	17.0
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	24	389	33	2	338	14	32	11	5	5	15	20
Future Vol, veh/h	24	389	33	2	338	14	32	11	5	5	15	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	85	85	85	85	85	85
Heavy Vehicles, %	0	8	0	0	4	0	6	0	0	0	0	0
Mvmt Flow	27	432	37	2	376	16	38	13	6	6	18	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	392	0	0	469	0	0	914	901	451	902	911	384
Stage 1	-	-	-	-	-	-	505	505	-	388	388	-
Stage 2	-	-	-	-	-	-	409	396	-	514	523	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.16	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.554	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1178	-	-	1103	-	-	250	280	613	261	276	668
Stage 1	-	-	-	-	-	-	542	544	-	640	612	-
Stage 2	-	-	-	-	-	-	611	607	-	547	534	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1178	-	-	1103	-	-	223	271	613	243	267	668
Mov Cap-2 Maneuver	-	-	-	-	-	-	223	271	-	243	267	-
Stage 1	-	-	-	-	-	-	525	527	-	620	611	-
Stage 2	-	-	-	-	-	-	571	606	-	512	517	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	23.6	16
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	250	1178	-	-	1103	-	-	375
HCM Lane V/C Ratio	0.226	0.023	-	-	0.002	-	-	0.125
HCM Control Delay (s)	23.6	8.1	0	-	8.3	0	-	16
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0	-	-	0.4

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	253	2	31	213	0	0	0	0	78	2	3
Future Vol, veh/h	0	253	2	31	213	0	0	0	0	78	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	95	95	90	90	90	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	266	2	34	237	0	0	0	0	82	2	3

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	-	266	0	0			571	571	237
Stage 1	-	-	-	-	-	-			305	305	-
Stage 2	-	-	-	-	-	-			266	266	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	0	1298	-	0			482	431	802
Stage 1	0	-	0	-	-	0			748	662	-
Stage 2	0	-	0	-	-	0			779	689	-
Platoon blocked, %		-			-						
Mov Cap-1 Maneuver	-	-	-	1298	-	-			469	0	802
Mov Cap-2 Maneuver	-	-	-	-	-	-			469	0	-
Stage 1	-	-	-	-	-	-			748	0	-
Stage 2	-	-	-	-	-	-			759	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1	5.2
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBL	WBT	SBLn1
Capacity (veh/h)	-	1298	-	22189
HCM Lane V/C Ratio	-	0.027	-	0.004
HCM Control Delay (s)	-	7.8	-	5.2
HCM Lane LOS	-	A	-	A
HCM 95th %tile Q(veh)	-	0.1	-	0

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	171	8	8	144	6	8
Future Vol, veh/h	171	8	8	144	6	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	85	85
Heavy Vehicles, %	7	0	0	6	0	0
Mvmt Flow	190	9	9	160	7	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	199	0	373	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	178	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1385	-	632	851
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	858	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1385	-	628	851
Mov Cap-2 Maneuver	-	-	-	-	628	-
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	852	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	739	-	-	1385	-
HCM Lane V/C Ratio	0.022	-	-	0.006	-
HCM Control Delay (s)	10	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

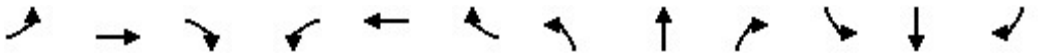
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	21	13	485	545	17
Future Vol, veh/h	3	21	13	485	545	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	90	90	90	90
Heavy Vehicles, %	0	0	0	0	3	0
Mvmt Flow	4	25	14	539	606	19

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	914	313	625	0	-	0
Stage 1	616	-	-	-	-	-
Stage 2	298	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	276	689	966	-	-	-
Stage 1	507	-	-	-	-	-
Stage 2	733	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	270	689	966	-	-	-
Mov Cap-2 Maneuver	270	-	-	-	-	-
Stage 1	496	-	-	-	-	-
Stage 2	733	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.6	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	966	-	577	-	-
HCM Lane V/C Ratio	0.015	-	0.049	-	-
HCM Control Delay (s)	8.8	0.1	11.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	0	6	83	2	28	23	438	27	12	473	29
Future Volume (veh/h)	42	0	6	83	2	28	23	438	27	12	473	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	907	1900	1900	1900	1900	1885	1900	1900	1856	1604
Adj Flow Rate, veh/h	49	0	7	98	2	33	26	487	30	13	526	32
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	67	0	0	0	0	1	0	0	3	20
Cap, veh/h	391	15	27	349	3	50	59	1005	62	31	938	57
Arrive On Green	0.13	0.00	0.13	0.13	0.13	0.13	0.03	0.29	0.29	0.02	0.28	0.28
Sat Flow, veh/h	1344	114	208	1144	23	385	1810	3428	211	1810	3376	205
Grp Volume(v), veh/h	56	0	0	133	0	0	26	254	263	13	274	284
Grp Sat Flow(s),veh/h/ln	1666	0	0	1552	0	0	1810	1791	1847	1810	1763	1819
Q Serve(g_s), s	0.0	0.0	0.0	1.6	0.0	0.0	0.4	3.6	3.6	0.2	4.1	4.1
Cycle Q Clear(g_c), s	0.9	0.0	0.0	2.4	0.0	0.0	0.4	3.6	3.6	0.2	4.1	4.1
Prop In Lane	0.87		0.12	0.74		0.25	1.00		0.11	1.00		0.11
Lane Grp Cap(c), veh/h	433	0	0	402	0	0	59	525	541	31	490	505
V/C Ratio(X)	0.13	0.00	0.00	0.33	0.00	0.00	0.44	0.48	0.49	0.42	0.56	0.56
Avail Cap(c_a), veh/h	1081	0	0	1077	0	0	297	1119	1154	291	1096	1130
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.1	0.0	0.0	12.8	0.0	0.0	14.7	9.0	9.0	15.1	9.6	9.6
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.5	0.0	0.0	5.2	0.7	0.7	8.8	1.0	1.0
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.7	0.0	0.0	0.2	0.8	0.9	0.1	1.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.3	0.0	0.0	13.2	0.0	0.0	20.0	9.7	9.7	23.9	10.6	10.6
LnGrp LOS	B	A	A	B	A	A	B	A	A	C	B	B
Approach Vol, veh/h		56			133			543			571	
Approach Delay, s/veh		12.3			13.2			10.2			10.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	14.8		10.0	6.7	14.3		10.0				
Change Period (Y+Rc), s	* 5.7	* 5.7		6.0	* 5.7	* 5.7		6.0				
Max Green Setting (Gmax), s	* 5	* 19		18.2	* 5.1	* 19		18.2				
Max Q Clear Time (g_c+I1), s	2.2	5.6		2.9	2.4	6.1		4.4				
Green Ext Time (p_c), s	0.0	2.3		0.2	0.0	2.5		0.5				

Intersection Summary		
HCM 6th Ctrl Delay		10.9
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	320	0	0	242	72	2	0	32	0	0	0
Future Vol, veh/h	11	320	0	0	242	72	2	0	32	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Yield	-	-	None
Storage Length	200	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	356	0	0	269	80	2	0	34	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	269	0	-	-	-	0	649	649	356
Stage 1	-	-	-	-	-	-	380	380	-
Stage 2	-	-	-	-	-	-	269	269	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1295	-	0	0	-	0	434	389	688
Stage 1	-	-	0	0	-	0	691	614	-
Stage 2	-	-	0	0	-	0	776	687	-
Platoon blocked, %		-			-				
Mov Cap-1 Maneuver	1295	-	-	-	-	-	430	0	688
Mov Cap-2 Maneuver	-	-	-	-	-	-	430	0	-
Stage 1	-	-	-	-	-	-	685	0	-
Stage 2	-	-	-	-	-	-	776	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.3	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT
Capacity (veh/h)	731	1295	-	-
HCM Lane V/C Ratio	0.049	0.009	-	-
HCM Control Delay (s)	10.2	7.8	-	-
HCM Lane LOS	B	A	-	-
HCM 95th %tile Q(veh)	0.2	0	-	-

Intersection	
Int Delay, s/veh	21.2

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	228	3	180	0	396	58	148	311	0
Future Vol, veh/h	0	0	0	228	3	180	0	396	58	148	311	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	-	-	-	265	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	50	9	0	2	10	6	1	0
Mvmt Flow	0	0	0	240	3	189	0	440	64	164	346	0

Major/Minor	Minor2		Major1			Major2			
Conflicting Flow All	894	1178	173	-	0	0	504	0	0
Stage 1	674	674	-	-	-	-	-	-	-
Stage 2	220	504	-	-	-	-	-	-	-
Critical Hdwy	6.84	7.5	7.08	-	-	-	4.22	-	-
Critical Hdwy Stg 1	5.84	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.5	3.39	-	-	-	2.26	-	-
Pot Cap-1 Maneuver	281	131	819	0	-	-	1029	-	0
Stage 1	468	351	-	0	-	-	-	-	0
Stage 2	795	434	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	~ 236	0	819	-	-	-	1029	-	-
Mov Cap-2 Maneuver	~ 236	0	-	-	-	-	-	-	-
Stage 1	468	0	-	-	-	-	-	-	-
Stage 2	669	0	-	-	-	-	-	-	-

Approach	SB	NE	SW
HCM Control Delay, s	67.4	0	3
HCM LOS	F		

Minor Lane/Major Mvmt	NET	NER	SBLn1	SBLn2	SWL	SWT
Capacity (veh/h)	-	-	236	819	1029	-
HCM Lane V/C Ratio	-	-	1.03	0.231	0.16	-
HCM Control Delay (s)	-	-	111.5	10.7	9.2	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	10	0.9	0.6	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	7	1	165	131	493	0	0	452	206
Future Vol, veh/h	0	0	0	7	1	165	131	493	0	0	452	206
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	130	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	0	0	4	1	3	0	0	3	4
Mvmt Flow	0	0	0	7	1	174	146	548	0	0	502	229

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	1091	1571	274	731	0	-	-	-	0
Stage 1	840	840	-	-	-	-	-	-	-
Stage 2	251	731	-	-	-	-	-	-	-
Critical Hdwy	6.8	6.5	6.98	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.8	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.8	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.34	2.21	-	-	-	-	-
Pot Cap-1 Maneuver	213	112	718	876	-	0	0	-	-
Stage 1	389	384	-	-	-	0	0	-	-
Stage 2	774	430	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	177	0	718	876	-	-	-	-	-
Mov Cap-2 Maneuver	177	0	-	-	-	-	-	-	-
Stage 1	324	0	-	-	-	-	-	-	-
Stage 2	774	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	12.3	2.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NWLn1	NWLn2	SWT	SWR
Capacity (veh/h)	876	-	177	718	-	-
HCM Lane V/C Ratio	0.166	-	0.048	0.242	-	-
HCM Control Delay (s)	9.9	-	26.4	11.6	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.6	-	0.1	0.9	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	92	42	39	98	26	219	72	351	119	234	516	42
Future Volume (veh/h)	92	42	39	98	26	219	72	351	119	234	516	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1900	1885	1900	1856	1870	1900	1870	1900
Adj Flow Rate, veh/h	108	49	46	109	29	0	80	390	132	260	573	47
Peak Hour Factor	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	2	0	1	0	3	2	0	2	0
Cap, veh/h	264	86	65	354	78		269	601	201	323	870	71
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.00	0.15	0.23	0.23	0.18	0.26	0.26
Sat Flow, veh/h	793	495	378	1186	450	1598	1810	2595	867	1810	3326	272
Grp Volume(v), veh/h	203	0	0	138	0	0	80	263	259	260	306	314
Grp Sat Flow(s),veh/h/ln	1666	0	0	1636	0	1598	1810	1763	1699	1810	1777	1821
Q Serve(g_s), s	1.7	0.0	0.0	0.0	0.0	0.0	1.7	5.9	6.0	6.0	6.7	6.7
Cycle Q Clear(g_c), s	4.8	0.0	0.0	3.0	0.0	0.0	1.7	5.9	6.0	6.0	6.7	6.7
Prop In Lane	0.53		0.23	0.79		1.00	1.00		0.51	1.00		0.15
Lane Grp Cap(c), veh/h	415	0	0	432	0		269	409	394	323	465	477
V/C Ratio(X)	0.49	0.00	0.00	0.32	0.00		0.30	0.64	0.66	0.81	0.66	0.66
Avail Cap(c_a), veh/h	856	0	0	811	0		296	743	716	392	843	864
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	0.0	0.0	16.1	0.0	0.0	16.5	15.1	15.1	17.1	14.3	14.3
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.4	0.0	0.0	0.6	1.7	1.9	9.8	1.6	1.6
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0	0.9	0.0	0.0	0.6	2.0	1.9	2.8	2.2	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.6	0.0	0.0	16.5	0.0	0.0	17.1	16.8	17.0	26.9	15.9	15.9
LnGrp LOS	B	A	A	B	A		B	B	B	C	B	B
Approach Vol, veh/h		203			138	A		602			880	
Approach Delay, s/veh		17.6			16.5			16.9			19.1	
Approach LOS		B			B			B			B	

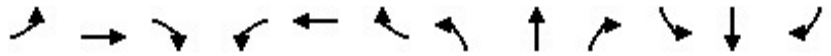
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.6	16.0		13.8	12.4	17.3		13.8				
Change Period (Y+Rc), s	* 5.9	* 5.9		* 6.3	* 5.9	* 5.9		* 6.3				
Max Green Setting (Gmax), s	* 9.4	* 18		* 20	* 7.1	* 21		* 19				
Max Q Clear Time (g_c+I1), s	8.0	8.0		6.8	3.7	8.7		5.0				
Green Ext Time (p_c), s	0.1	2.1		0.9	0.0	2.7		0.5				

Intersection Summary		
HCM 6th Ctrl Delay		18.0
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	35	268	142	45	25	280	499	111	27	540	82
Future Volume (veh/h)	42	35	268	142	45	25	280	499	111	27	540	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1870	1870	1900	1885	1900
Adj Flow Rate, veh/h	47	39	0	158	50	28	311	554	123	30	600	91
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	1	2	2	0	1	0
Cap, veh/h	152	98		327	70	324	374	1252	277	61	806	122
Arrive On Green	0.20	0.20	0.00	0.20	0.20	0.20	0.21	0.43	0.43	0.03	0.26	0.26
Sat Flow, veh/h	236	486	0	1032	347	1610	1795	2892	640	1810	3119	472
Grp Volume(v), veh/h	86	0	0	208	0	28	311	340	337	30	344	347
Grp Sat Flow(s),veh/h/ln	722	0	0	1379	0	1610	1795	1777	1755	1810	1791	1800
Q Serve(g_s), s	0.8	0.0	0.0	0.0	0.0	0.8	8.8	7.1	7.2	0.9	9.4	9.4
Cycle Q Clear(g_c), s	8.6	0.0	0.0	7.7	0.0	0.8	8.8	7.1	7.2	0.9	9.4	9.4
Prop In Lane	0.55		0.00	0.76		1.00	1.00		0.36	1.00		0.26
Lane Grp Cap(c), veh/h	250	0		396	0	324	374	769	760	61	463	465
V/C Ratio(X)	0.34	0.00		0.52	0.00	0.09	0.83	0.44	0.44	0.49	0.74	0.75
Avail Cap(c_a), veh/h	615	0		748	0	704	506	967	956	170	639	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	0.0	0.0	20.1	0.0	17.3	20.2	10.6	10.6	25.3	18.1	18.1
Incr Delay (d2), s/veh	0.8	0.0	0.0	1.1	0.0	0.1	8.5	0.4	0.4	6.0	3.0	3.1
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	2.3	0.0	0.3	3.9	2.1	2.1	0.4	3.5	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.0	0.0	0.0	21.1	0.0	17.4	28.7	11.0	11.0	31.3	21.2	21.2
LnGrp LOS	B	A		C	A	B	C	B	B	C	C	C
Approach Vol, veh/h		86	A		236			988			721	
Approach Delay, s/veh		20.0			20.7			16.6			21.6	
Approach LOS		B			C			B			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.8	29.1		16.4	17.1	19.8		16.4
Change Period (Y+Rc), s	* 6	* 6		* 5.7	* 6	* 6		* 5.7
Max Green Setting (Gmax), s	* 5	* 29		* 23	* 15	* 19		* 23
Max Q Clear Time (g_c+I1), s	2.9	9.2		10.6	10.8	11.4		9.7
Green Ext Time (p_c), s	0.0	3.7		0.2	0.4	2.3		1.0

Intersection Summary	
HCM 6th Ctrl Delay	19.0
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	32	317	32	5	367	35	48	23	10	18	26	26
Future Vol, veh/h	32	317	32	5	367	35	48	23	10	18	26	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	85	85	85	85	85	85
Heavy Vehicles, %	0	2	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	36	352	36	6	408	39	56	27	12	21	31	31

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	447	0	0	388	0	0	913	901	370	902	900	428
Stage 1	-	-	-	-	-	-	442	442	-	440	440	-
Stage 2	-	-	-	-	-	-	471	459	-	462	460	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1124	-	-	1182	-	-	256	280	680	261	280	631
Stage 1	-	-	-	-	-	-	598	580	-	600	581	-
Stage 2	-	-	-	-	-	-	577	570	-	584	569	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1124	-	-	1182	-	-	214	267	680	228	267	631
Mov Cap-2 Maneuver	-	-	-	-	-	-	214	267	-	228	267	-
Stage 1	-	-	-	-	-	-	573	556	-	575	577	-
Stage 2	-	-	-	-	-	-	516	566	-	524	546	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.1	28.1	20
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	249	1124	-	-	1182	-	-	322
HCM Lane V/C Ratio	0.383	0.032	-	-	0.005	-	-	0.256
HCM Control Delay (s)	28.1	8.3	0	-	8.1	0	-	20
HCM Lane LOS	D	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.7	0.1	-	-	0	-	-	1

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	219	3	37	258	0	0	0	0	76	2	5
Future Vol, veh/h	0	219	3	37	258	0	0	0	0	76	2	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	243	3	41	287	0	0	0	0	80	2	5

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	-	243	0	0			612	612	287
Stage 1	-	-	-	-	-	-			369	369	-
Stage 2	-	-	-	-	-	-			243	243	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	0	1323	-	0			456	408	752
Stage 1	0	-	0	-	-	0			699	621	-
Stage 2	0	-	0	-	-	0			797	705	-
Platoon blocked, %		-			-						
Mov Cap-1 Maneuver	-	-	-	1323	-	-			442	0	752
Mov Cap-2 Maneuver	-	-	-	-	-	-			442	0	-
Stage 1	-	-	-	-	-	-			699	0	-
Stage 2	-	-	-	-	-	-			772	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1	5.3
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBL	WBT	SBLn1
Capacity (veh/h)	-	1323	-	12483
HCM Lane V/C Ratio	-	0.031	-	0.007
HCM Control Delay (s)	-	7.8	-	5.3
HCM Lane LOS	-	A	-	A
HCM 95th %tile Q(veh)	-	0.1	-	0

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	147	3	6	179	0	9
Future Vol, veh/h	147	3	6	179	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	85	85
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	163	3	7	199	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	166	0	378	165
Stage 1	-	-	-	-	165	-
Stage 2	-	-	-	-	213	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1424	-	628	885
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	827	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1424	-	624	885
Mov Cap-2 Maneuver	-	-	-	-	624	-
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	822	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	885	-	-	1424	-
HCM Lane V/C Ratio	0.012	-	-	0.005	-
HCM Control Delay (s)	9.1	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

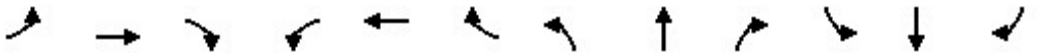
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	57	45	521	592	10
Future Vol, veh/h	8	57	45	521	592	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	90	90	90	90
Heavy Vehicles, %	0	0	0	2	2	0
Mvmt Flow	9	67	50	579	658	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1054	335	669	0	-	0
Stage 1	664	-	-	-	-	-
Stage 2	390	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	225	667	931	-	-	-
Stage 1	479	-	-	-	-	-
Stage 2	659	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	207	667	931	-	-	-
Mov Cap-2 Maneuver	207	-	-	-	-	-
Stage 1	441	-	-	-	-	-
Stage 2	659	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13	1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	931	-	524	-	-
HCM Lane V/C Ratio	0.054	-	0.146	-	-
HCM Control Delay (s)	9.1	0.3	13	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.5	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	14	48	110	11	45	34	404	91	39	444	34
Future Volume (veh/h)	48	14	48	110	11	45	34	404	91	39	444	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1796	1900	1900	1737	1900	1870	1900	1900	1870	1900
Adj Flow Rate, veh/h	56	16	56	129	13	53	38	449	101	43	493	38
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	7	0	0	11	0	2	0	0	2	0
Cap, veh/h	253	61	124	348	21	71	80	772	172	89	910	70
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.04	0.27	0.27	0.05	0.27	0.27
Sat Flow, veh/h	602	370	756	1036	126	434	1810	2887	645	1810	3344	257
Grp Volume(v), veh/h	128	0	0	195	0	0	38	275	275	43	261	270
Grp Sat Flow(s),veh/h/ln	1728	0	0	1595	0	0	1810	1777	1754	1810	1777	1824
Q Serve(g_s), s	0.0	0.0	0.0	1.6	0.0	0.0	0.7	4.5	4.6	0.8	4.2	4.2
Cycle Q Clear(g_c), s	2.1	0.0	0.0	3.7	0.0	0.0	0.7	4.5	4.6	0.8	4.2	4.2
Prop In Lane	0.44		0.44	0.66		0.27	1.00		0.37	1.00		0.14
Lane Grp Cap(c), veh/h	437	0	0	440	0	0	80	475	469	89	483	496
V/C Ratio(X)	0.29	0.00	0.00	0.44	0.00	0.00	0.47	0.58	0.59	0.48	0.54	0.54
Avail Cap(c_a), veh/h	1013	0	0	987	0	0	297	998	985	303	1003	1030
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.6	0.0	0.0	13.2	0.0	0.0	15.6	10.6	10.7	15.5	10.4	10.4
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.7	0.0	0.0	4.3	1.1	1.2	4.0	0.9	0.9
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	1.1	0.0	0.0	0.3	1.2	1.2	0.3	1.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.0	0.0	0.0	13.9	0.0	0.0	19.9	11.8	11.8	19.5	11.3	11.3
LnGrp LOS	B	A	A	B	A	A	B	B	B	B	B	B
Approach Vol, veh/h		128			195			588			574	
Approach Delay, s/veh		13.0			13.9			12.3			11.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	14.6		11.5	7.2	14.8		11.5				
Change Period (Y+Rc), s	* 5.7	* 5.7		6.0	* 5.7	* 5.7		6.0				
Max Green Setting (Gmax), s	* 5.6	* 19		18.2	* 5.5	* 19		18.2				
Max Q Clear Time (g_c+I1), s	2.8	6.6		4.1	2.7	6.2		5.7				
Green Ext Time (p_c), s	0.0	2.4		0.5	0.0	2.3		0.8				

Intersection Summary		
HCM 6th Ctrl Delay		12.4
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	287	0	0	294	73	1	0	25	0	0	0
Future Vol, veh/h	8	287	0	0	294	73	1	0	25	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Yield	-	-	None
Storage Length	200	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	319	0	0	327	81	1	0	26	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	327	0	-	-	-	0	664	664	319
Stage 1	-	-	-	-	-	-	337	337	-
Stage 2	-	-	-	-	-	-	327	327	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1233	-	0	0	-	0	426	381	722
Stage 1	-	-	0	0	-	0	723	641	-
Stage 2	-	-	0	0	-	0	731	648	-
Platoon blocked, %		-			-				
Mov Cap-1 Maneuver	1233	-	-	-	-	-	423	0	722
Mov Cap-2 Maneuver	-	-	-	-	-	-	423	0	-
Stage 1	-	-	-	-	-	-	718	0	-
Stage 2	-	-	-	-	-	-	731	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	0	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT
Capacity (veh/h)	751	1233	-	-
HCM Lane V/C Ratio	0.036	0.007	-	-
HCM Control Delay (s)	10	7.9	-	-
HCM Lane LOS	B	A	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-

Intersection	
Int Delay, s/veh	11.2

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	171	0	170	0	407	25	147	272	0
Future Vol, veh/h	0	0	0	171	0	170	0	407	25	147	272	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	-	-	-	265	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	17	0	8	0	4	31	12	8	0
Mvmt Flow	0	0	0	180	0	179	0	452	28	163	302	0

Major/Minor	Minor2		Major1			Major2			
Conflicting Flow All	854	1108	151	-	0	0	480	0	0
Stage 1	628	628	-	-	-	-	-	-	-
Stage 2	226	480	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.5	7.06	-	-	-	4.34	-	-
Critical Hdwy Stg 1	6.14	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.67	4	3.38	-	-	-	2.32	-	-
Pot Cap-1 Maneuver	270	212	850	0	-	-	1011	-	0
Stage 1	455	479	-	0	-	-	-	-	0
Stage 2	747	558	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	227	0	850	-	-	-	1011	-	-
Mov Cap-2 Maneuver	227	0	-	-	-	-	-	-	-
Stage 1	455	0	-	-	-	-	-	-	-
Stage 2	627	0	-	-	-	-	-	-	-

Approach	SB	NE	SW
HCM Control Delay, s	36.7	0	3.2
HCM LOS	E		

Minor Lane/Major Mvmt	NET	NER	SBLn1	SBLn2	SWL	SWT
Capacity (veh/h)	-	-	227	850	1011	-
HCM Lane V/C Ratio	-	-	0.793	0.211	0.162	-
HCM Control Delay (s)	-	-	62.8	10.4	9.2	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	5.8	0.8	0.6	-

Intersection	
Int Delay, s/veh	2.9

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	8	0	199	157	421	0	0	411	248
Future Vol, veh/h	0	0	0	8	0	199	157	421	0	0	411	248
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	130	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	67	0	14	6	7	0	0	8	7
Mvmt Flow	0	0	0	8	0	209	174	468	0	0	457	276

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	1045	1549	234	733	0	-	-	-	0
Stage 1	816	816	-	-	-	-	-	-	-
Stage 2	229	733	-	-	-	-	-	-	-
Critical Hdwy	8.14	6.5	7.18	4.22	-	-	-	-	-
Critical Hdwy Stg 1	7.14	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7.14	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.17	4	3.44	2.26	-	-	-	-	-
Pot Cap-1 Maneuver	140	115	732	842	-	0	0	-	-
Stage 1	265	393	-	-	-	0	0	-	-
Stage 2	624	429	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	111	0	732	842	-	-	-	-	-
Mov Cap-2 Maneuver	111	0	-	-	-	-	-	-	-
Stage 1	210	0	-	-	-	-	-	-	-
Stage 2	624	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	13	2.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NWLn1	NWLn2	SWT	SWR
Capacity (veh/h)	842	-	111	732	-	-
HCM Lane V/C Ratio	0.207	-	0.076	0.286	-	-
HCM Control Delay (s)	10.4	-	40.1	11.9	-	-
HCM Lane LOS	B	-	E	B	-	-
HCM 95th %tile Q(veh)	0.8	-	0.2	1.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	66	21	35	92	78	198	41	450	66	231	535	96
Future Volume (veh/h)	66	21	35	92	78	198	41	450	66	231	535	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1781	1263	1826	1900	1900	1574	1767	1796	1841	1781	1900
Adj Flow Rate, veh/h	78	25	41	102	87	0	46	500	73	257	594	107
Peak Hour Factor	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	5	8	43	5	0	0	22	9	7	4	8	0
Cap, veh/h	240	64	71	259	134		73	735	107	324	1107	199
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.00	0.05	0.25	0.25	0.19	0.39	0.39
Sat Flow, veh/h	736	411	456	854	853	1610	1499	2940	428	1753	2866	515
Grp Volume(v), veh/h	144	0	0	189	0	0	46	284	289	257	350	351
Grp Sat Flow(s),veh/h/ln	1603	0	0	1707	0	1610	1499	1678	1690	1753	1692	1689
Q Serve(g_s), s	0.0	0.0	0.0	1.0	0.0	0.0	1.3	6.8	6.8	6.2	7.1	7.1
Cycle Q Clear(g_c), s	3.4	0.0	0.0	4.4	0.0	0.0	1.3	6.8	6.8	6.2	7.1	7.1
Prop In Lane	0.54		0.28	0.54		1.00	1.00		0.25	1.00		0.30
Lane Grp Cap(c), veh/h	376	0	0	392	0		73	419	422	324	653	652
V/C Ratio(X)	0.38	0.00	0.00	0.48	0.00		0.63	0.68	0.68	0.79	0.54	0.54
Avail Cap(c_a), veh/h	782	0	0	825	0		240	704	709	558	978	976
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	0.0	0.0	17.6	0.0	0.0	20.7	15.0	15.0	17.2	10.5	10.5
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.9	0.0	0.0	8.6	1.9	2.0	4.4	0.7	0.7
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	1.4	0.0	0.0	0.6	2.2	2.2	2.3	1.9	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.8	0.0	0.0	18.5	0.0	0.0	29.3	16.9	17.0	21.6	11.2	11.2
LnGrp LOS	B	A	A	B	A		C	B	B	C	B	B
Approach Vol, veh/h		144			189	A		619			958	
Approach Delay, s/veh		17.8			18.5			17.9			14.0	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.1	17.0		13.2	8.1	23.0		13.2				
Change Period (Y+Rc), s	* 5.9	* 5.9		* 6.3	* 5.9	* 5.9		* 6.3				
Max Green Setting (Gmax), s	* 14	* 19		* 20	* 7.1	* 26		* 19				
Max Q Clear Time (g_c+I1), s	8.2	8.8		5.4	3.3	9.1		6.4				
Green Ext Time (p_c), s	0.4	2.2		0.6	0.0	3.6		0.6				

Intersection Summary	
HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	35	299	110	53	46	247	394	89	23	483	54
Future Volume (veh/h)	50	35	299	110	53	46	247	394	89	23	483	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1796	1900	1900	1796	1900	1796	1811	1856	1900
Adj Flow Rate, veh/h	56	39	0	122	59	51	274	438	99	26	537	60
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	7	0	0	7	0	7	6	3	0
Cap, veh/h	186	99		308	101	278	337	1209	271	53	789	88
Arrive On Green	0.17	0.17	0.00	0.17	0.17	0.17	0.20	0.41	0.41	0.03	0.25	0.25
Sat Flow, veh/h	359	573	0	1026	582	1610	1711	2930	657	1725	3198	356
Grp Volume(v), veh/h	95	0	0	181	0	51	274	269	268	26	295	302
Grp Sat Flow(s),veh/h/ln	932	0	0	1608	0	1610	1711	1805	1782	1725	1763	1791
Q Serve(g_s), s	1.1	0.0	0.0	0.0	0.0	1.2	7.1	4.7	4.8	0.7	7.0	7.0
Cycle Q Clear(g_c), s	5.8	0.0	0.0	4.7	0.0	1.2	7.1	4.7	4.8	0.7	7.0	7.0
Prop In Lane	0.59		0.00	0.67		1.00	1.00		0.37	1.00		0.20
Lane Grp Cap(c), veh/h	285	0		408	0	278	337	745	735	53	435	442
V/C Ratio(X)	0.33	0.00		0.44	0.00	0.18	0.81	0.36	0.37	0.49	0.68	0.68
Avail Cap(c_a), veh/h	686	0		820	0	713	482	1057	1044	187	727	738
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.7	0.0	0.0	17.7	0.0	16.3	17.7	9.3	9.4	22.0	15.7	15.7
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.8	0.0	0.3	7.0	0.3	0.3	6.9	1.9	1.9
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	1.7	0.0	0.4	2.9	1.3	1.3	0.3	2.4	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.4	0.0	0.0	18.5	0.0	16.6	24.7	9.6	9.7	28.9	17.6	17.6
LnGrp LOS	B	A		B	A	B	C	A	A	C	B	B
Approach Vol, veh/h		95	A		232			811			623	
Approach Delay, s/veh		18.4			18.1			14.7			18.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.4	25.0		13.7	15.1	17.4		13.7
Change Period (Y+Rc), s	* 6	* 6		* 5.7	* 6	* 6		* 5.7
Max Green Setting (Gmax), s	* 5	* 27		* 20	* 13	* 19		* 20
Max Q Clear Time (g_c+I1), s	2.7	6.8		7.8	9.1	9.0		6.7
Green Ext Time (p_c), s	0.0	2.8		0.3	0.3	2.3		0.9

Intersection Summary	
HCM 6th Ctrl Delay	16.5
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	24	397	33	2	338	14	32	11	5	5	15	20
Future Vol, veh/h	24	397	33	2	338	14	32	11	5	5	15	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	85	85	85	85	85	85
Heavy Vehicles, %	0	8	0	0	4	0	6	0	0	0	0	0
Mvmt Flow	27	441	37	2	376	16	38	13	6	6	18	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	392	0	0	478	0	0	923	910	460	911	920	384
Stage 1	-	-	-	-	-	-	514	514	-	388	388	-
Stage 2	-	-	-	-	-	-	409	396	-	523	532	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.16	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.16	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.554	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1178	-	-	1095	-	-	246	277	605	257	273	668
Stage 1	-	-	-	-	-	-	536	539	-	640	612	-
Stage 2	-	-	-	-	-	-	611	607	-	541	529	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1178	-	-	1095	-	-	220	268	605	239	264	668
Mov Cap-2 Maneuver	-	-	-	-	-	-	220	268	-	239	264	-
Stage 1	-	-	-	-	-	-	519	522	-	620	611	-
Stage 2	-	-	-	-	-	-	571	606	-	506	513	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	23.9	16.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	246	1178	-	-	1095	-	-	371
HCM Lane V/C Ratio	0.23	0.023	-	-	0.002	-	-	0.127
HCM Control Delay (s)	23.9	8.1	0	-	8.3	0	-	16.1
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0	-	-	0.4

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	253	2	31	213	0	0	0	0	78	2	3
Future Vol, veh/h	0	253	2	31	213	0	0	0	0	78	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	281	2	34	237	0	0	0	0	82	2	3

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	-	281	0	0			586	586	237
Stage 1	-	-	-	-	-	-			305	305	-
Stage 2	-	-	-	-	-	-			281	281	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	0	1282	-	0			473	422	802
Stage 1	0	-	0	-	-	0			748	662	-
Stage 2	0	-	0	-	-	0			767	678	-
Platoon blocked, %		-			-						
Mov Cap-1 Maneuver	-	-	-	1282	-	-			460	0	802
Mov Cap-2 Maneuver	-	-	-	-	-	-			460	0	-
Stage 1	-	-	-	-	-	-			748	0	-
Stage 2	-	-	-	-	-	-			746	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1	5.2
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBL	WBT	SBLn1
Capacity (veh/h)	-	1282	-	22189
HCM Lane V/C Ratio	-	0.027	-	0.004
HCM Control Delay (s)	-	7.9	-	5.2
HCM Lane LOS	-	A	-	A
HCM 95th %tile Q(veh)	-	0.1	-	0

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	171	8	8	144	6	8
Future Vol, veh/h	171	8	8	144	6	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	85	85
Heavy Vehicles, %	7	0	0	6	0	0
Mvmt Flow	190	9	9	160	7	9

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	199	0	373	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	178	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1385	-	632	851
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	858	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1385	-	628	851
Mov Cap-2 Maneuver	-	-	-	-	628	-
Stage 1	-	-	-	-	843	-
Stage 2	-	-	-	-	852	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	739	-	-	1385	-
HCM Lane V/C Ratio	0.022	-	-	0.006	-
HCM Control Delay (s)	10	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

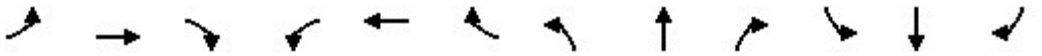
Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	21	15	487	539	16
Future Vol, veh/h	3	21	15	487	539	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	90	90	90	90
Heavy Vehicles, %	0	0	0	0	3	0
Mvmt Flow	4	25	17	541	599	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	913	309	617	0	-	0
Stage 1	608	-	-	-	-	-
Stage 2	305	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	277	693	973	-	-	-
Stage 1	512	-	-	-	-	-
Stage 2	727	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	270	693	973	-	-	-
Mov Cap-2 Maneuver	270	-	-	-	-	-
Stage 1	499	-	-	-	-	-
Stage 2	727	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.5	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	973	-	580	-	-
HCM Lane V/C Ratio	0.017	-	0.049	-	-
HCM Control Delay (s)	8.8	0.1	11.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	0	6	83	2	28	24	438	28	12	466	29
Future Volume (veh/h)	42	0	6	83	2	28	24	438	28	12	466	29
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	907	1900	1900	1900	1900	1885	1900	1900	1856	1604
Adj Flow Rate, veh/h	49	0	7	98	2	33	27	487	31	13	518	32
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	67	0	0	0	0	1	0	0	3	20
Cap, veh/h	392	15	27	350	3	50	61	997	63	31	928	57
Arrive On Green	0.13	0.00	0.13	0.13	0.13	0.13	0.03	0.29	0.29	0.02	0.28	0.28
Sat Flow, veh/h	1344	114	208	1144	23	385	1810	3420	217	1810	3373	208
Grp Volume(v), veh/h	56	0	0	133	0	0	27	254	264	13	270	280
Grp Sat Flow(s),veh/h/ln	1666	0	0	1552	0	0	1810	1791	1846	1810	1763	1818
Q Serve(g_s), s	0.0	0.0	0.0	1.6	0.0	0.0	0.5	3.6	3.7	0.2	4.1	4.1
Cycle Q Clear(g_c), s	0.8	0.0	0.0	2.4	0.0	0.0	0.5	3.6	3.7	0.2	4.1	4.1
Prop In Lane	0.87		0.12	0.74		0.25	1.00		0.12	1.00		0.11
Lane Grp Cap(c), veh/h	434	0	0	403	0	0	61	522	538	31	485	500
V/C Ratio(X)	0.13	0.00	0.00	0.33	0.00	0.00	0.45	0.49	0.49	0.42	0.56	0.56
Avail Cap(c_a), veh/h	1083	0	0	1079	0	0	298	1121	1156	292	1098	1133
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.1	0.0	0.0	12.7	0.0	0.0	14.7	9.1	9.1	15.1	9.6	9.6
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.5	0.0	0.0	5.1	0.7	0.7	8.8	1.0	1.0
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.7	0.0	0.0	0.2	0.9	0.9	0.1	1.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.2	0.0	0.0	13.2	0.0	0.0	19.8	9.8	9.8	23.9	10.6	10.6
LnGrp LOS	B	A	A	B	A	A	B	A	A	C	B	B
Approach Vol, veh/h		56			133			545			563	
Approach Delay, s/veh		12.2			13.2			10.3			10.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	14.7		10.0	6.7	14.2		10.0				
Change Period (Y+Rc), s	* 5.7	* 5.7		6.0	* 5.7	* 5.7		6.0				
Max Green Setting (Gmax), s	* 5	* 19		18.2	* 5.1	* 19		18.2				
Max Q Clear Time (g_c+I1), s	2.2	5.7		2.8	2.5	6.1		4.4				
Green Ext Time (p_c), s	0.0	2.3		0.2	0.0	2.4		0.5				

Intersection Summary		
HCM 6th Ctrl Delay		10.9
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	320	0	0	241	72	3	0	40	0	0	0
Future Vol, veh/h	11	320	0	0	241	72	3	0	40	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Yield	-	-	None
Storage Length	200	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	356	0	0	268	80	3	0	42	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	268	0	-	-	-	0	648	648	356
Stage 1	-	-	-	-	-	-	380	380	-
Stage 2	-	-	-	-	-	-	268	268	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1296	-	0	0	-	0	435	389	688
Stage 1	-	-	0	0	-	0	691	614	-
Stage 2	-	-	0	0	-	0	777	687	-
Platoon blocked, %		-			-				
Mov Cap-1 Maneuver	1296	-	-	-	-	-	431	0	688
Mov Cap-2 Maneuver	-	-	-	-	-	-	431	0	-
Stage 1	-	-	-	-	-	-	685	0	-
Stage 2	-	-	-	-	-	-	777	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.3	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT
Capacity (veh/h)	740	1296	-	-
HCM Lane V/C Ratio	0.061	0.009	-	-
HCM Control Delay (s)	10.2	7.8	-	-
HCM Lane LOS	B	A	-	-
HCM 95th %tile Q(veh)	0.2	0	-	-

Intersection	
Int Delay, s/veh	21.2

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	228	3	180	0	396	58	148	311	0
Future Vol, veh/h	0	0	0	228	3	180	0	396	58	148	311	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	-	-	-	265	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	50	9	0	2	10	6	1	0
Mvmt Flow	0	0	0	240	3	189	0	440	64	164	346	0

Major/Minor	Minor2		Major1			Major2			
Conflicting Flow All	894	1178	173	-	0	0	504	0	0
Stage 1	674	674	-	-	-	-	-	-	-
Stage 2	220	504	-	-	-	-	-	-	-
Critical Hdwy	6.84	7.5	7.08	-	-	-	4.22	-	-
Critical Hdwy Stg 1	5.84	6.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	6.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.5	3.39	-	-	-	2.26	-	-
Pot Cap-1 Maneuver	281	131	819	0	-	-	1029	-	0
Stage 1	468	351	-	0	-	-	-	-	0
Stage 2	795	434	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	~ 236	0	819	-	-	-	1029	-	-
Mov Cap-2 Maneuver	~ 236	0	-	-	-	-	-	-	-
Stage 1	468	0	-	-	-	-	-	-	-
Stage 2	669	0	-	-	-	-	-	-	-

Approach	SB	NE	SW
HCM Control Delay, s	67.4	0	3
HCM LOS	F		

Minor Lane/Major Mvmt	NET	NER	SBLn1	SBLn2	SWL	SWT
Capacity (veh/h)	-	-	236	819	1029	-
HCM Lane V/C Ratio	-	-	1.03	0.231	0.16	-
HCM Control Delay (s)	-	-	111.5	10.7	9.2	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	10	0.9	0.6	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.3

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	7	1	165	131	493	0	0	452	206
Future Vol, veh/h	0	0	0	7	1	165	131	493	0	0	452	206
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	70	130	-	-	-	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	0	0	4	1	3	0	0	3	4
Mvmt Flow	0	0	0	7	1	174	146	548	0	0	502	229

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	1091	1571	274	731	0	-	-	-	0
Stage 1	840	840	-	-	-	-	-	-	-
Stage 2	251	731	-	-	-	-	-	-	-
Critical Hdwy	6.8	6.5	6.98	4.12	-	-	-	-	-
Critical Hdwy Stg 1	5.8	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.8	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.34	2.21	-	-	-	-	-
Pot Cap-1 Maneuver	213	112	718	876	-	0	0	-	-
Stage 1	389	384	-	-	-	0	0	-	-
Stage 2	774	430	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	177	0	718	876	-	-	-	-	-
Mov Cap-2 Maneuver	177	0	-	-	-	-	-	-	-
Stage 1	324	0	-	-	-	-	-	-	-
Stage 2	774	0	-	-	-	-	-	-	-

Approach	NW	NE	SW
HCM Control Delay, s	12.3	2.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	NWLn1	NWLn2	SWT	SWR
Capacity (veh/h)	876	-	177	718	-	-
HCM Lane V/C Ratio	0.166	-	0.048	0.242	-	-
HCM Control Delay (s)	9.9	-	26.4	11.6	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.6	-	0.1	0.9	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (veh/h)	92	42	39	98	26	219	72	351	119	234	516	42
Future Volume (veh/h)	92	42	39	98	26	219	72	351	119	234	516	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1870	1900	1885	1900	1856	1870	1900	1870	1900
Adj Flow Rate, veh/h	108	49	46	109	29	0	80	390	132	260	573	47
Peak Hour Factor	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	2	0	1	0	3	2	0	2	0
Cap, veh/h	264	86	65	354	78		269	601	201	323	870	71
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.00	0.15	0.23	0.23	0.18	0.26	0.26
Sat Flow, veh/h	793	495	378	1186	450	1598	1810	2595	867	1810	3326	272
Grp Volume(v), veh/h	203	0	0	138	0	0	80	263	259	260	306	314
Grp Sat Flow(s),veh/h/ln	1666	0	0	1636	0	1598	1810	1763	1699	1810	1777	1821
Q Serve(g_s), s	1.7	0.0	0.0	0.0	0.0	0.0	1.7	5.9	6.0	6.0	6.7	6.7
Cycle Q Clear(g_c), s	4.8	0.0	0.0	3.0	0.0	0.0	1.7	5.9	6.0	6.0	6.7	6.7
Prop In Lane	0.53		0.23	0.79		1.00	1.00		0.51	1.00		0.15
Lane Grp Cap(c), veh/h	415	0	0	432	0		269	409	394	323	465	477
V/C Ratio(X)	0.49	0.00	0.00	0.32	0.00		0.30	0.64	0.66	0.81	0.66	0.66
Avail Cap(c_a), veh/h	856	0	0	811	0		296	743	716	392	843	864
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.7	0.0	0.0	16.1	0.0	0.0	16.5	15.1	15.1	17.1	14.3	14.3
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.4	0.0	0.0	0.6	1.7	1.9	9.8	1.6	1.6
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0	0.9	0.0	0.0	0.6	2.0	1.9	2.8	2.2	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.6	0.0	0.0	16.5	0.0	0.0	17.1	16.8	17.0	26.9	15.9	15.9
LnGrp LOS	B	A	A	B	A		B	B	B	C	B	B
Approach Vol, veh/h		203			138	A		602			880	
Approach Delay, s/veh		17.6			16.5			16.9			19.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.6	16.0		13.8	12.4	17.3		13.8				
Change Period (Y+Rc), s	* 5.9	* 5.9		* 6.3	* 5.9	* 5.9		* 6.3				
Max Green Setting (Gmax), s	* 9.4	* 18		* 20	* 7.1	* 21		* 19				
Max Q Clear Time (g_c+I1), s	8.0	8.0		6.8	3.7	8.7		5.0				
Green Ext Time (p_c), s	0.1	2.1		0.9	0.0	2.7		0.5				

Intersection Summary	
HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	35	266	142	45	25	280	499	111	27	534	81
Future Volume (veh/h)	50	35	266	142	45	25	280	499	111	27	534	81
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1885	1870	1870	1900	1885	1900
Adj Flow Rate, veh/h	56	39	0	158	50	28	311	554	123	30	593	90
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0	1	2	2	0	1	0
Cap, veh/h	168	92		335	75	335	373	1242	275	61	796	121
Arrive On Green	0.21	0.21	0.00	0.21	0.21	0.21	0.21	0.43	0.43	0.03	0.26	0.26
Sat Flow, veh/h	296	441	0	1042	362	1610	1795	2892	640	1810	3119	472
Grp Volume(v), veh/h	95	0	0	208	0	28	311	340	337	30	340	343
Grp Sat Flow(s),veh/h/ln	737	0	0	1404	0	1610	1795	1777	1755	1810	1791	1800
Q Serve(g_s), s	1.5	0.0	0.0	0.0	0.0	0.8	8.9	7.3	7.3	0.9	9.4	9.4
Cycle Q Clear(g_c), s	9.0	0.0	0.0	7.5	0.0	0.8	8.9	7.3	7.3	0.9	9.4	9.4
Prop In Lane	0.59		0.00	0.76		1.00	1.00		0.36	1.00		0.26
Lane Grp Cap(c), veh/h	260	0		410	0	335	373	763	754	61	457	459
V/C Ratio(X)	0.37	0.00		0.51	0.00	0.08	0.83	0.45	0.45	0.49	0.74	0.75
Avail Cap(c_a), veh/h	602	0		746	0	700	500	957	945	168	632	635
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.2	0.0	0.0	19.8	0.0	17.2	20.4	10.8	10.9	25.6	18.4	18.4
Incr Delay (d2), s/veh	0.9	0.0	0.0	1.0	0.0	0.1	8.8	0.4	0.4	6.1	3.1	3.1
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	2.3	0.0	0.3	4.0	2.2	2.2	0.4	3.6	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.0	0.0	0.0	20.8	0.0	17.3	29.3	11.2	11.3	31.6	21.5	21.6
LnGrp LOS	C	A		C	A	B	C	B	B	C	C	C
Approach Vol, veh/h		95	A		236			988			713	
Approach Delay, s/veh		21.0			20.4			16.9			22.0	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.8	29.1		16.9	17.2	19.7		16.9
Change Period (Y+Rc), s	* 6	* 6		* 5.7	* 6	* 6		* 5.7
Max Green Setting (Gmax), s	* 5	* 29		* 23	* 15	* 19		* 23
Max Q Clear Time (g_c+I1), s	2.9	9.3		11.0	10.9	11.4		9.5
Green Ext Time (p_c), s	0.0	3.7		0.3	0.4	2.3		1.0

Intersection Summary	
HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	32	323	32	5	366	35	48	23	10	18	26	26
Future Vol, veh/h	32	323	32	5	366	35	48	23	10	18	26	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	85	85	85	85	85	85
Heavy Vehicles, %	0	2	0	0	3	0	0	0	0	0	0	0
Mvmt Flow	36	359	36	6	407	39	56	27	12	21	31	31

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	446	0	0	395	0	0	919	907	377	908	906	427
Stage 1	-	-	-	-	-	-	449	449	-	439	439	-
Stage 2	-	-	-	-	-	-	470	458	-	469	467	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1125	-	-	1175	-	-	254	278	674	258	278	632
Stage 1	-	-	-	-	-	-	593	576	-	601	582	-
Stage 2	-	-	-	-	-	-	578	570	-	579	565	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1125	-	-	1175	-	-	212	265	674	225	265	632
Mov Cap-2 Maneuver	-	-	-	-	-	-	212	265	-	225	265	-
Stage 1	-	-	-	-	-	-	569	552	-	576	578	-
Stage 2	-	-	-	-	-	-	517	566	-	519	542	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.1	28.4	20.2
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	247	1125	-	-	1175	-	-	319
HCM Lane V/C Ratio	0.386	0.032	-	-	0.005	-	-	0.258
HCM Control Delay (s)	28.4	8.3	0	-	8.1	0	-	20.2
HCM Lane LOS	D	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.7	0.1	-	-	0	-	-	1

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	219	3	37	258	0	0	0	0	76	2	5
Future Vol, veh/h	0	219	3	37	258	0	0	0	0	76	2	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	Yield
Storage Length	-	-	-	250	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	243	3	41	287	0	0	0	0	80	2	5

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	-	0	-	243	0	0			612	612	287
Stage 1	-	-	-	-	-	-			369	369	-
Stage 2	-	-	-	-	-	-			243	243	-
Critical Hdwy	-	-	-	4.12	-	-			6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-			3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	0	1323	-	0			456	408	752
Stage 1	0	-	0	-	-	0			699	621	-
Stage 2	0	-	0	-	-	0			797	705	-
Platoon blocked, %		-			-						
Mov Cap-1 Maneuver	-	-	-	1323	-	-			442	0	752
Mov Cap-2 Maneuver	-	-	-	-	-	-			442	0	-
Stage 1	-	-	-	-	-	-			699	0	-
Stage 2	-	-	-	-	-	-			772	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1	5.3
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBL	WBT	SBLn1
Capacity (veh/h)	-	1323	-	12483
HCM Lane V/C Ratio	-	0.031	-	0.007
HCM Control Delay (s)	-	7.8	-	5.3
HCM Lane LOS	-	A	-	A
HCM 95th %tile Q(veh)	-	0.1	-	0

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	147	3	6	179	0	9
Future Vol, veh/h	147	3	6	179	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	85	85
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	163	3	7	199	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	166	0	378	165
Stage 1	-	-	-	-	165	-
Stage 2	-	-	-	-	213	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1424	-	628	885
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	827	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1424	-	624	885
Mov Cap-2 Maneuver	-	-	-	-	624	-
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	822	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	885	-	-	1424	-
HCM Lane V/C Ratio	0.012	-	-	0.005	-
HCM Control Delay (s)	9.1	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

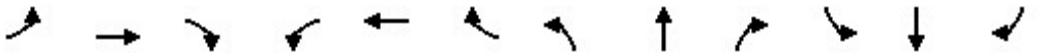
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	56	51	523	586	10
Future Vol, veh/h	8	56	51	523	586	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	90	90	90	90
Heavy Vehicles, %	0	0	0	2	2	0
Mvmt Flow	9	66	57	581	651	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1062	331	662	0	-	0
Stage 1	657	-	-	-	-	-
Stage 2	405	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	222	671	936	-	-	-
Stage 1	483	-	-	-	-	-
Stage 2	648	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	202	671	936	-	-	-
Mov Cap-2 Maneuver	202	-	-	-	-	-
Stage 1	440	-	-	-	-	-
Stage 2	648	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.1	1.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	936	-	520	-	-
HCM Lane V/C Ratio	0.061	-	0.145	-	-
HCM Control Delay (s)	9.1	0.3	13.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.5	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	14	48	110	11	45	34	404	91	39	444	34
Future Volume (veh/h)	48	14	48	110	11	45	34	404	91	39	444	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1796	1900	1900	1737	1900	1870	1900	1900	1870	1900
Adj Flow Rate, veh/h	56	16	56	129	13	53	38	449	101	43	493	38
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	7	0	0	11	0	2	0	0	2	0
Cap, veh/h	253	61	124	348	21	71	80	772	172	89	910	70
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.04	0.27	0.27	0.05	0.27	0.27
Sat Flow, veh/h	602	370	756	1036	126	434	1810	2887	645	1810	3344	257
Grp Volume(v), veh/h	128	0	0	195	0	0	38	275	275	43	261	270
Grp Sat Flow(s),veh/h/ln	1728	0	0	1595	0	0	1810	1777	1754	1810	1777	1824
Q Serve(g_s), s	0.0	0.0	0.0	1.6	0.0	0.0	0.7	4.5	4.6	0.8	4.2	4.2
Cycle Q Clear(g_c), s	2.1	0.0	0.0	3.7	0.0	0.0	0.7	4.5	4.6	0.8	4.2	4.2
Prop In Lane	0.44		0.44	0.66		0.27	1.00		0.37	1.00		0.14
Lane Grp Cap(c), veh/h	437	0	0	440	0	0	80	475	469	89	483	496
V/C Ratio(X)	0.29	0.00	0.00	0.44	0.00	0.00	0.47	0.58	0.59	0.48	0.54	0.54
Avail Cap(c_a), veh/h	1013	0	0	987	0	0	297	998	985	303	1003	1030
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.6	0.0	0.0	13.2	0.0	0.0	15.6	10.6	10.7	15.5	10.4	10.4
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.7	0.0	0.0	4.3	1.1	1.2	4.0	0.9	0.9
Initial Q Delay(d3),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
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	1.1	0.0	0.0	0.3	1.2	1.2	0.3	1.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.0	0.0	0.0	13.9	0.0	0.0	19.9	11.8	11.8	19.5	11.3	11.3
LnGrp LOS	B	A	A	B	A	A	B	B	B	B	B	B
Approach Vol, veh/h		128			195			588			574	
Approach Delay, s/veh		13.0			13.9			12.3			11.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	14.6		11.5	7.2	14.8		11.5				
Change Period (Y+Rc), s	* 5.7	* 5.7		6.0	* 5.7	* 5.7		6.0				
Max Green Setting (Gmax), s	* 5.6	* 19		18.2	* 5.5	* 19		18.2				
Max Q Clear Time (g_c+I1), s	2.8	6.6		4.1	2.7	6.2		5.7				
Green Ext Time (p_c), s	0.0	2.4		0.5	0.0	2.3		0.8				

Intersection Summary		
HCM 6th Ctrl Delay	12.4	
HCM 6th LOS	B	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	287	0	0	293	73	2	0	31	0	0	0
Future Vol, veh/h	8	287	0	0	293	73	2	0	31	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	Yield	-	-	None
Storage Length	200	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	16965	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	319	0	0	326	81	2	0	33	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	326	0	-	-	-	0	663	663	319
Stage 1	-	-	-	-	-	-	337	337	-
Stage 2	-	-	-	-	-	-	326	326	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1234	-	0	0	-	0	426	382	722
Stage 1	-	-	0	0	-	0	723	641	-
Stage 2	-	-	0	0	-	0	731	648	-
Platoon blocked, %		-			-				
Mov Cap-1 Maneuver	1234	-	-	-	-	-	423	0	722
Mov Cap-2 Maneuver	-	-	-	-	-	-	423	0	-
Stage 1	-	-	-	-	-	-	718	0	-
Stage 2	-	-	-	-	-	-	731	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT
Capacity (veh/h)	769	1234	-	-
HCM Lane V/C Ratio	0.045	0.007	-	-
HCM Control Delay (s)	9.9	7.9	-	-
HCM Lane LOS	A	A	-	-
HCM 95th %tile Q(veh)	0.1	0	-	-

APPENDIX C HCS REPORTS

HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	4/16/2021
Agency	ODOT	Analysis Year	2020
Jurisdiction	City of Purcell, OK	Time Period Analyzed	NB- AM Peak Hour - Existing Configuration
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	9
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start NB	300	2
2	Diverge	Diverge	SH 74(South) Off	1500	2
3	Basic	Basic	SH 74(South) Off to SH 74(South) On	2410	2
4	Merge	Merge	SH 74(South) On	1500	2
5	Basic	Basic	SH 74(South) On to N Green Ave(SH 74) Off	17205	2
6	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
7	Basic	Basic	N Green Ave (SH 74) Off to N Green Ave (SH 74) On	2740	2
8	Merge	Merge	N Green Ave (SH 74) On	1500	2
9	Basic	Basic	Study Limit - End NB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.93	0.741	1759	4646	0.38	72.4	12.2	B

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.93	0.87	0.741	0.901	1759	191	4646	2033	0.38	0.09	62.4	62.4	14.1	17.1	B

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.93	0.741	1541	4646	0.33	72.0	10.6	A

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.93	0.87	0.741	0.885	1923	382	4646	2033	0.41	0.19	62.9	62.9	15.3	18.0	B

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.93	0.741	1968	4646	0.42	72.4	13.6	B

Segment 6: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.93	0.86	0.741	0.962	1968	37	4646	1936	0.42	0.02	58.9	58.9	16.7	18.3	B

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.775	1819	4646	0.39	72.0	12.6	B

Segment 8: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.93	0.92	0.775	0.962	2283	445	4646	2130	0.49	0.21	62.2	62.2	18.4	21.8	C

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.775	2360	4646	0.51	70.0	16.4	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	69.7	13.8	10.3	4.70	B

Facility Overall Results

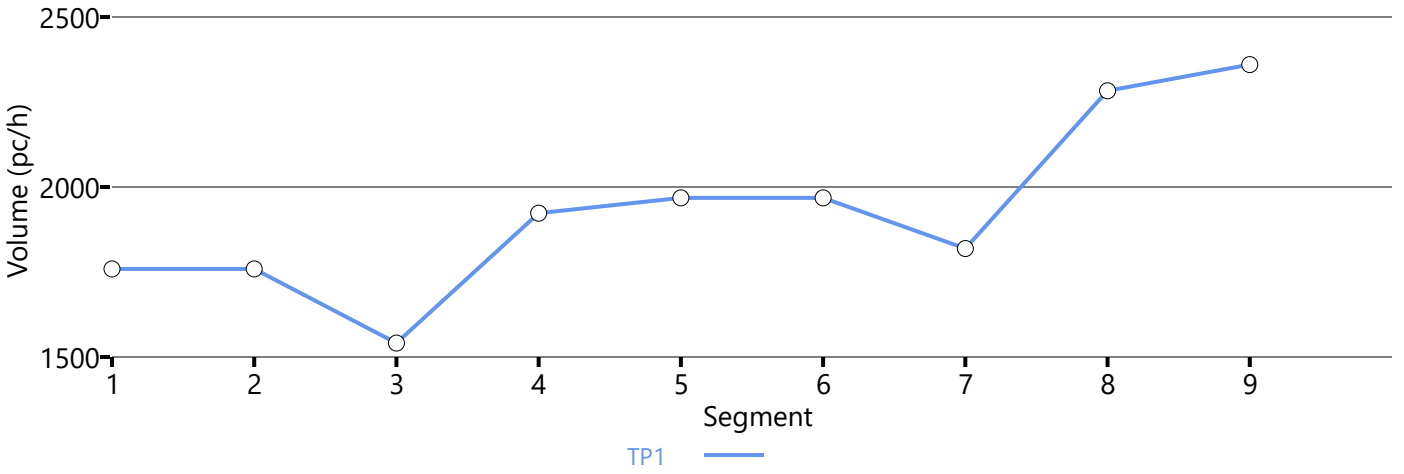
Space Mean Speed, mi/h	69.7	Density, veh/mi/ln	10.3
Average Travel Time, min	4.70	Density, pc/mi/ln	13.8

Messages

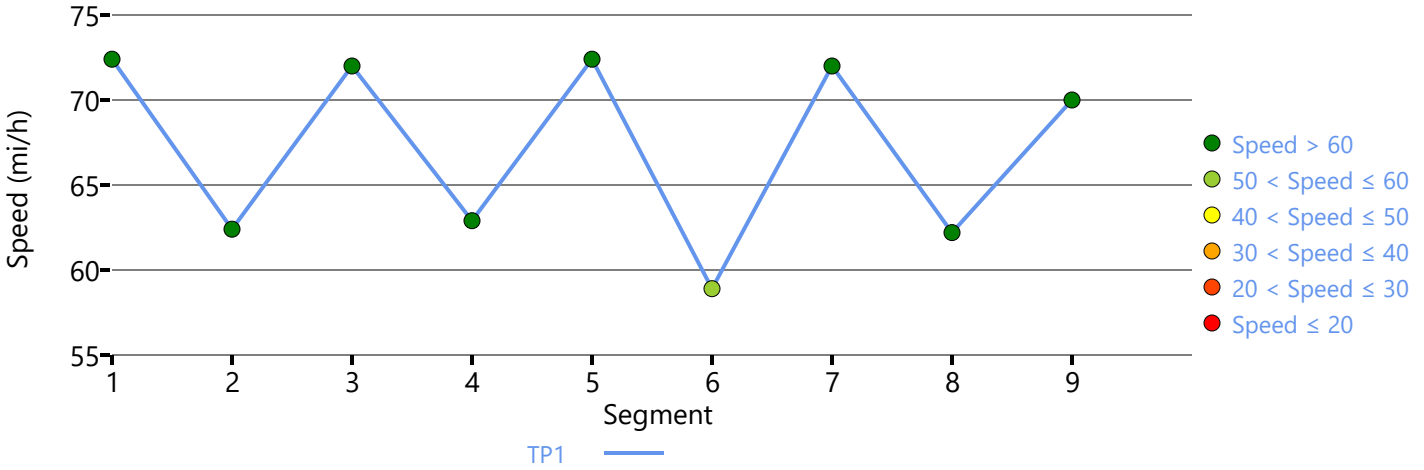
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

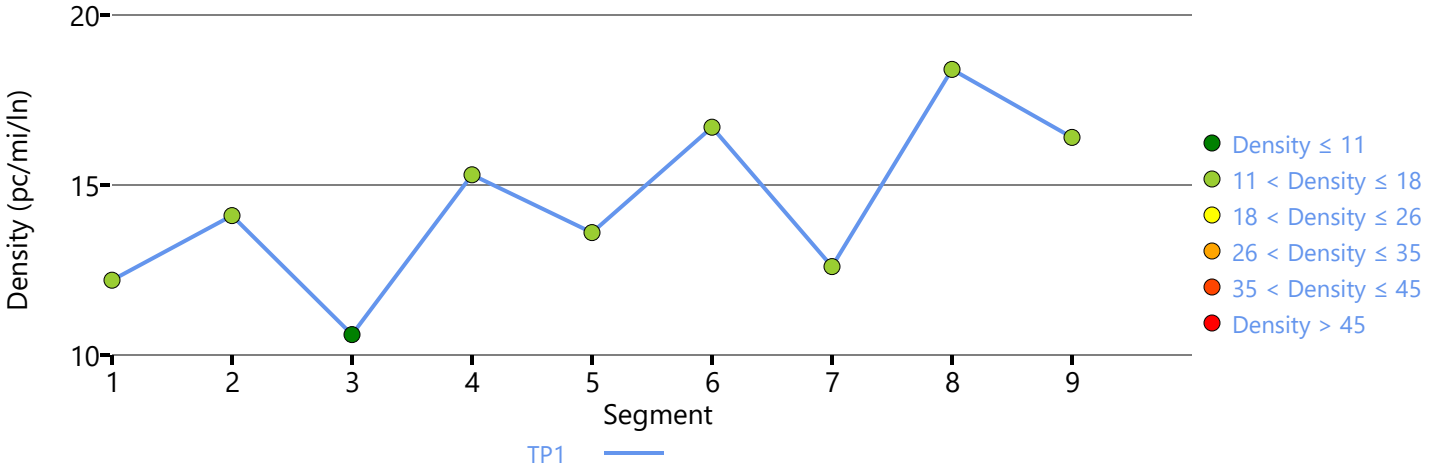
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	4/16/2021
Agency	ODOT	Analysis Year	2020
Jurisdiction	City of Purcell, OK	Time Period Analyzed	NB- PM Peak Hour - Existing Configuration
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	9
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start NB	300	2
2	Diverge	Diverge	SH 74(South) Off	1500	2
3	Basic	Basic	SH 74(South) Off to SH 74(South) On	2410	2
4	Merge	Merge	SH 74(South) On	1500	2
5	Basic	Basic	SH 74(South) On to N Green Ave(SH 74) Off	17205	2
6	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
7	Basic	Basic	N Green Ave (SH 74) Off to N Green Ave (SH 74) On	2740	2
8	Merge	Merge	N Green Ave (SH 74) On	1500	2
9	Basic	Basic	Study Limit -End NB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.775	2073	4646	0.45	72.4	14.3	B

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.86	0.775	0.909	2073	160	4646	2033	0.45	0.08	62.5	62.5	16.6	19.8	B

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.775	1901	4646	0.41	72.0	13.1	B

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.81	0.775	0.909	2234	333	4646	2033	0.48	0.16	62.6	62.6	17.8	20.4	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.775	2237	4646	0.48	72.3	15.5	B

Segment 6: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.85	0.775	0.943	2237	30	4646	1936	0.48	0.02	59.0	59.0	19.0	20.6	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.781	2188	4646	0.47	72.0	15.1	B

Segment 8: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.94	0.87	0.781	0.909	2675	487	4646	2130	0.58	0.23	61.6	61.6	21.7	24.8	C

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.94	0.781	2712	4646	0.58	69.9	19.1	C

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	69.6	16.0	12.4	4.70	C

Facility Overall Results

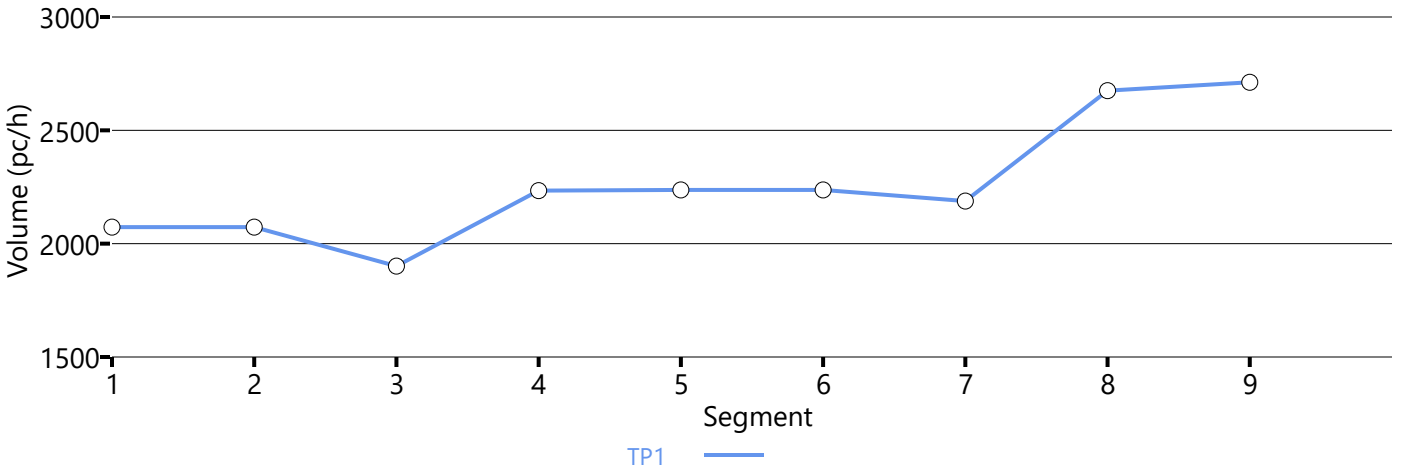
Space Mean Speed, mi/h	69.6	Density, veh/mi/ln	12.4
Average Travel Time, min	4.70	Density, pc/mi/ln	16.0

Messages

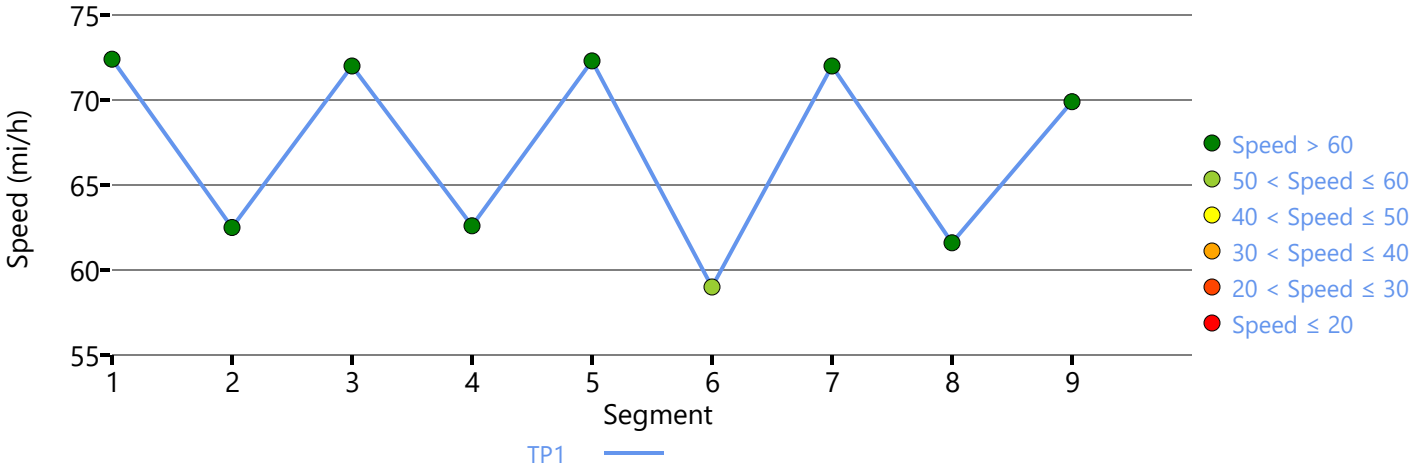
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

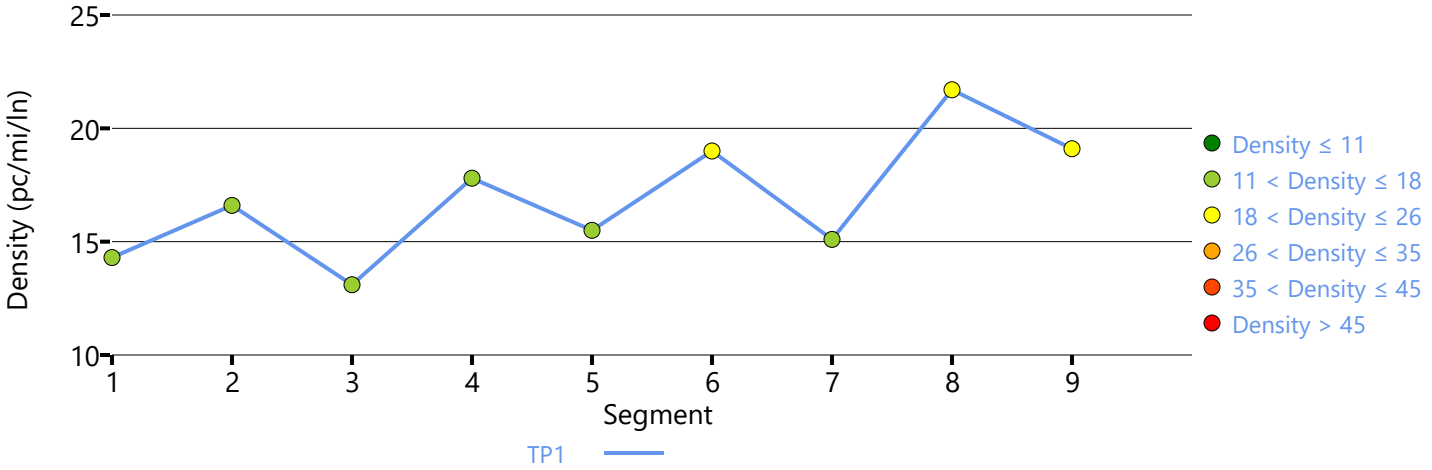
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	4/16/2021
Agency	ODOT	Analysis Year	2020
Jurisdiction	City of Purcell, OK	Time Period Analyzed	SB- AM Peak Hour - Existing Configuration
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start SB	300	2
2	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
3	Basic	Basic	N Green Ave (SH 74) Off to SH 74 (South) Off	21430	2
4	Diverge	Diverge	SH 74(South) Off	1500	2
5	Basic	Basic	SH 74(South) Off to SH 74(South) On	2380	2
6	Merge	Merge	SH 74(South) On	1500	2
7	Basic	Basic	Study Limit - End SB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.89	0.769	2909	4646	0.63	70.8	20.5	C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.89	0.81	0.769	0.935	2909	516	4646	2130	0.63	0.24	66.1	66.1	22.0	25.7	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.91	0.725	2425	4646	0.52	72.8	16.6	B

Segment 4: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	

1	0.91	0.82	0.725	0.862	2425	349	4646	2033	0.52	0.17	62.6	62.6	19.4	22.4	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.91	0.725	2051	4646	0.44	72.9	14.0	B

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.91	0.95	0.725	0.862	2234	183	4646	2033	0.48	0.09	63.1	63.1	17.7	20.7	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.91	0.725	2278	4646	0.49	71.0	15.6	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	71.2	16.9	12.3	4.60	C

Facility Overall Results

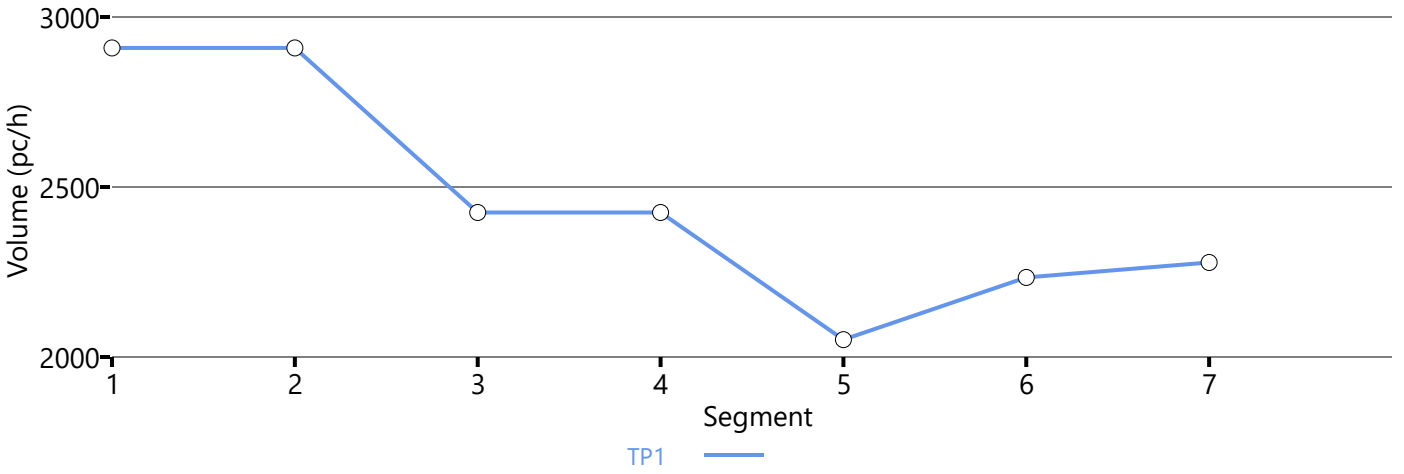
Space Mean Speed, mi/h	71.2	Density, veh/mi/ln	12.3
Average Travel Time, min	4.60	Density, pc/mi/ln	16.9

Messages

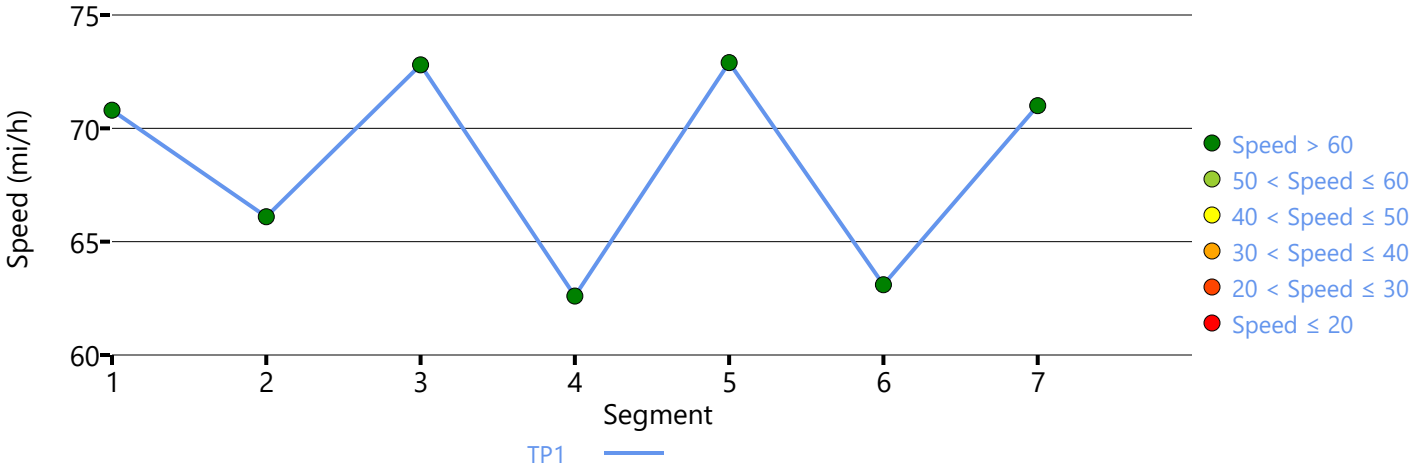
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

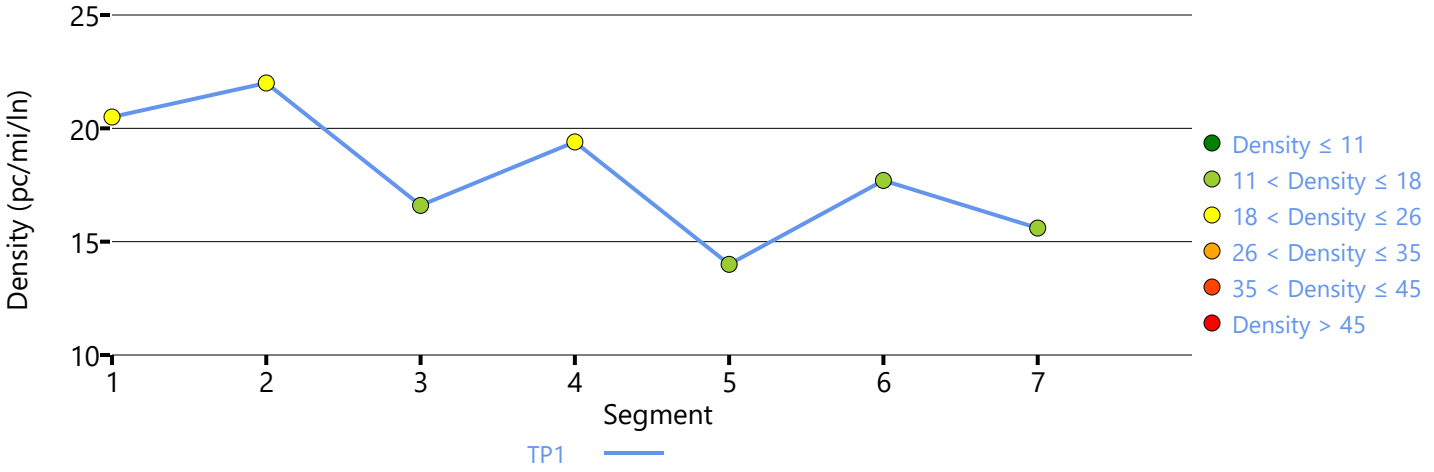
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	4/16/2021
Agency	ODOT	Analysis Year	2020
Jurisdiction	City of Purcell, OK	Time Period Analyzed	SB- PM Peak Hour - Existing Configuration
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start SB	300	2
2	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
3	Basic	Basic	N Green Ave (SH 74) Off to SH 74 (South) Off	21430	2
4	Diverge	Diverge	SH 74(South) Off	1500	2
5	Basic	Basic	SH 74(South) Off to SH 74(South) On	2380	2
6	Merge	Merge	SH 74(South) On	1500	2
7	Basic	Basic	Study Limit - End SB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.90	0.820	2325	4646	0.50	73.1	15.9	B

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.90	0.84	0.820	0.952	2325	491	4646	2130	0.50	0.23	66.2	66.2	17.6	20.6	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.91	0.787	1847	4646	0.40	73.4	12.6	B

Segment 4: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	

1	0.91	0.87	0.787	0.935	1847	366	4646	2033	0.40	0.18	62.6	62.6	14.8	17.4	B

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.91	0.787	1431	4646	0.31	72.9	9.8	A

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.91	0.84	0.787	0.862	1682	251	4646	2033	0.36	0.12	63.6	63.6	13.2	16.4	B

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.91	0.787	1685	4646	0.36	71.1	11.5	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	71.6	12.8	10.1	4.60	B

Facility Overall Results

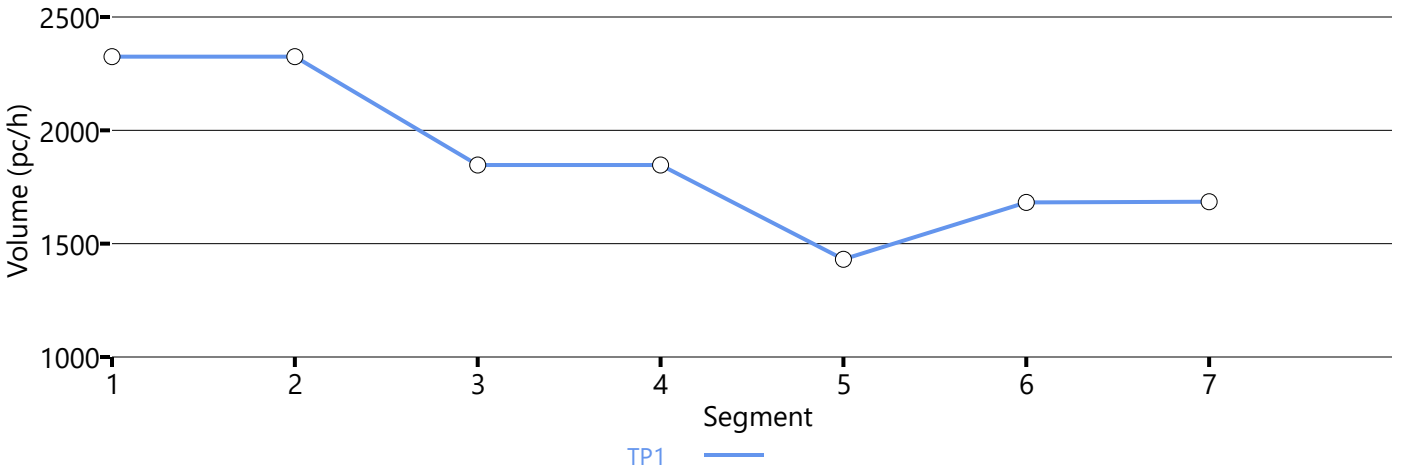
Space Mean Speed, mi/h	71.6	Density, veh/mi/ln	10.1
Average Travel Time, min	4.60	Density, pc/mi/ln	12.8

Messages

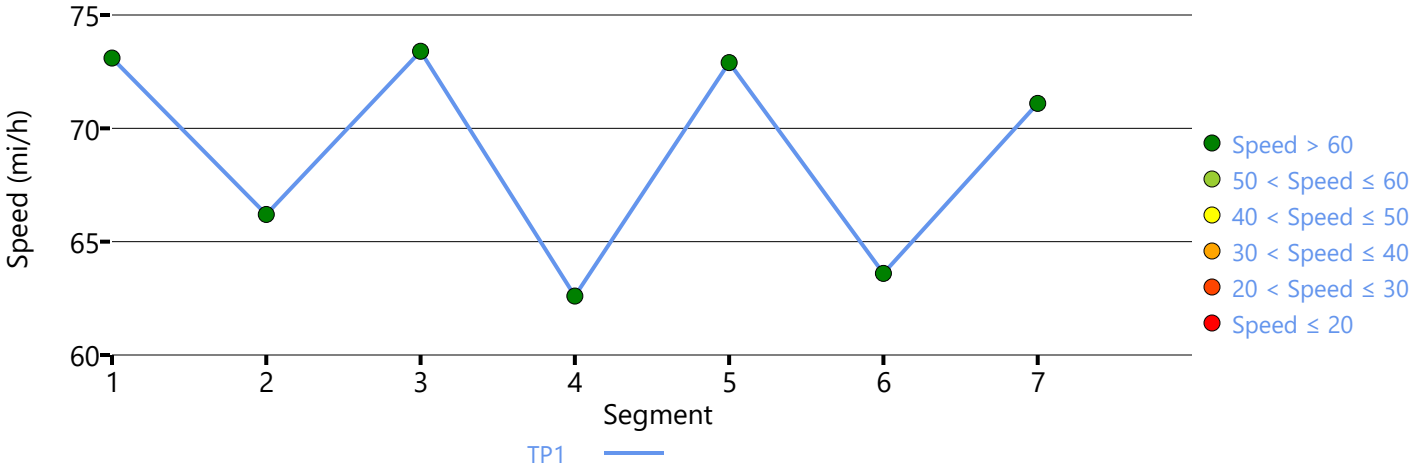
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

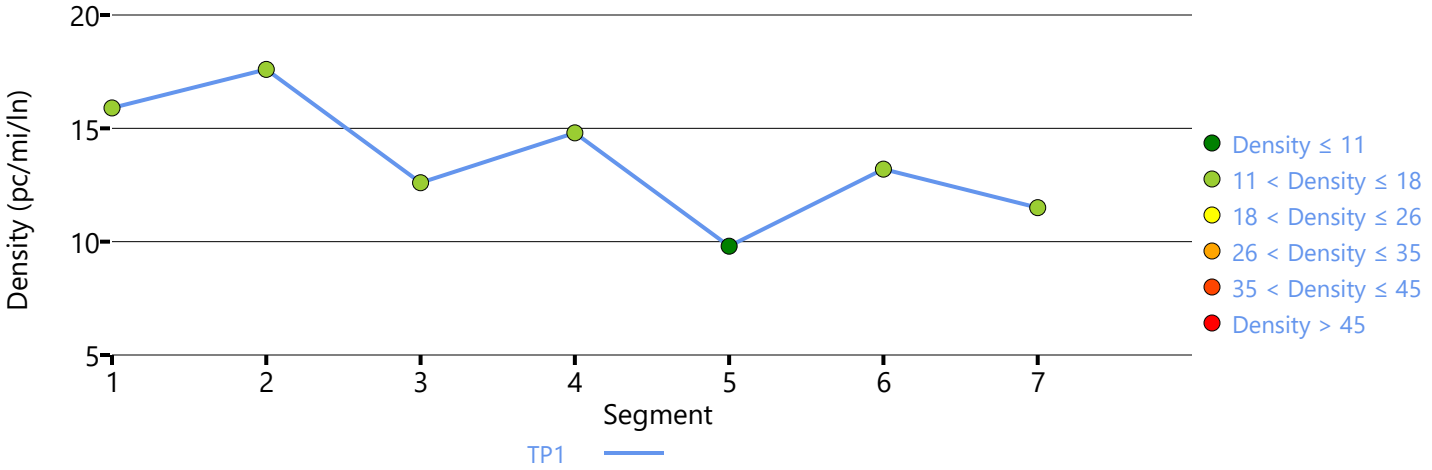
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	9/3/20
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	NB- AM Peak Hour - Existing Configuration
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	9
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start NB	300	2
2	Diverge	Diverge	SH 74(South) Off	1500	2
3	Basic	Basic	SH 74(South) Off to SH 74(South) On	2410	2
4	Merge	Merge	SH 74(South) On	1500	2
5	Basic	Basic	SH 74(South) On to N Green Ave(SH 74) Off	17205	2
6	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
7	Basic	Basic	N Green Ave (SH 74) Off to N Green Ave (SH 74) On	2740	2
8	Merge	Merge	N Green Ave (SH 74) On	1500	2
9	Basic	Basic	Study Limit - End NB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.741	2377	4646	0.51	72.3	16.4	B

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.741	0.901	2377	242	4646	2033	0.51	0.12	62.4	62.4	19.0	22.4	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.741	2083	4646	0.45	72.2	14.4	B

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.741	0.885	2565	482	4646	2033	0.55	0.24	62.3	62.3	20.6	23.0	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.741	2658	4646	0.57	71.5	18.6	C

Segment 6: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.741	0.962	2658	47	4646	1936	0.57	0.02	59.0	59.0	22.5	24.2	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	2483	4646	0.53	72.0	17.2	B

Segment 8: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.962	3130	647	4646	2130	0.67	0.30	60.8	60.8	25.7	28.3	D

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	3286	4646	0.71	67.9	24.2	C

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	69.0	18.9	14.1	4.80	C

Facility Overall Results

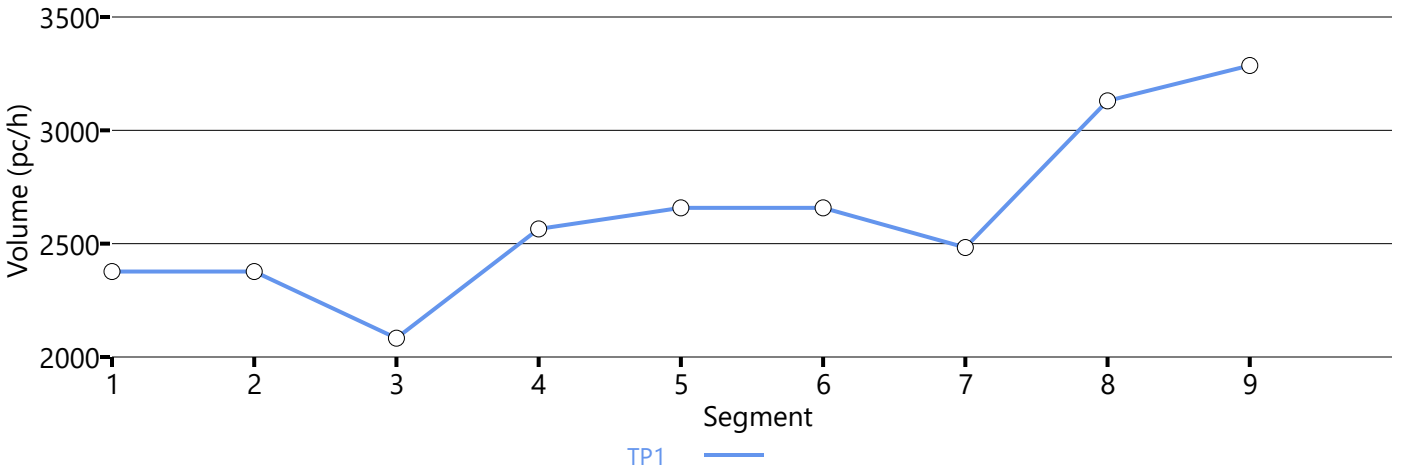
Space Mean Speed, mi/h	69.0	Density, veh/mi/ln	14.1
Average Travel Time, min	4.80	Density, pc/mi/ln	18.9

Messages

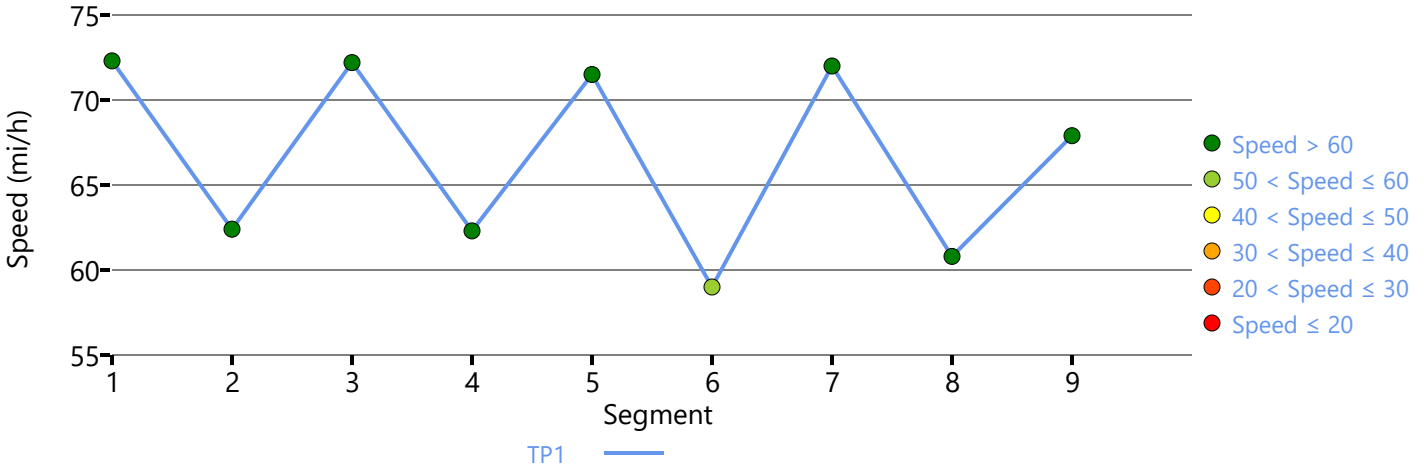
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

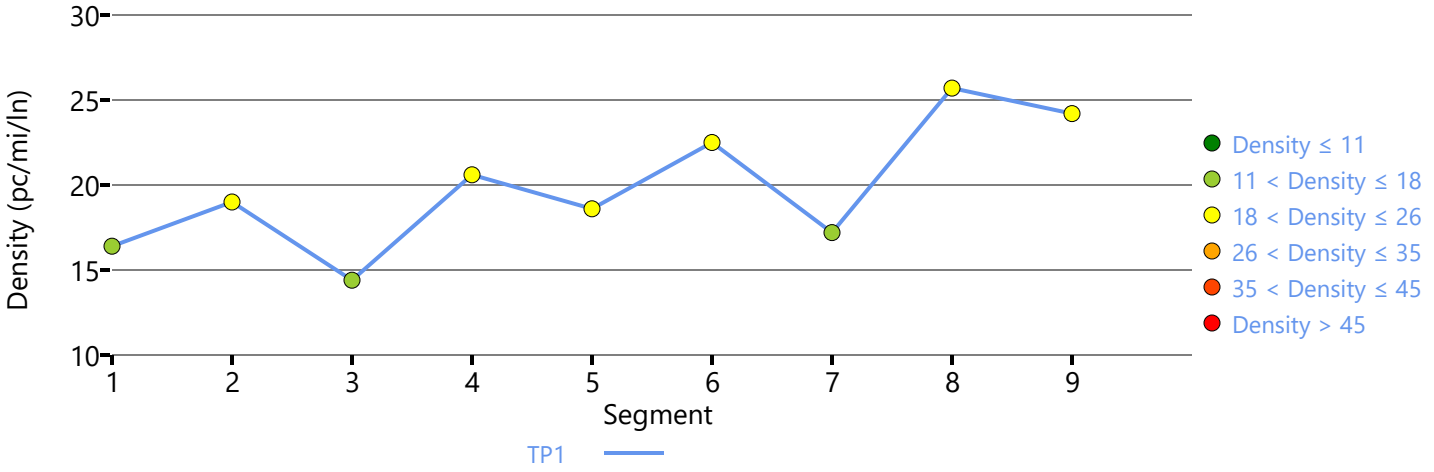
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	9/3/20
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	NB- PM Peak Hour - Existing Configuration
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	9
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start NB	300	2
2	Diverge	Diverge	SH 74(South) Off	1500	2
3	Basic	Basic	SH 74(South) Off to SH 74(South) On	2410	2
4	Merge	Merge	SH 74(South) On	1500	2
5	Basic	Basic	SH 74(South) On to N Green Ave(SH 74) Off	17205	2
6	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
7	Basic	Basic	N Green Ave (SH 74) Off to N Green Ave (SH 74) On	2740	2
8	Merge	Merge	N Green Ave (SH 74) On	1500	2
9	Basic	Basic	Study Limit -End NB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	2831	4646	0.61	70.7	20.0	C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.909	2831	200	4646	2033	0.61	0.10	62.5	62.5	22.6	26.3	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	2596	4646	0.56	71.7	18.1	C

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.909	2987	391	4646	2033	0.64	0.19	61.4	61.4	24.3	26.3	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	3055	4646	0.66	69.5	22.0	C

Segment 6: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.943	3055	37	4646	1936	0.66	0.02	59.0	59.0	25.9	27.6	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.781	2987	4646	0.64	69.9	21.4	C

Segment 8: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.781	0.909	3656	669	4646	2130	0.79	0.31	58.9	58.9	31.0	32.4	D

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.781	3766	4646	0.81	63.5	29.7	D

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	67.4	22.5	17.4	4.90	D

Facility Overall Results

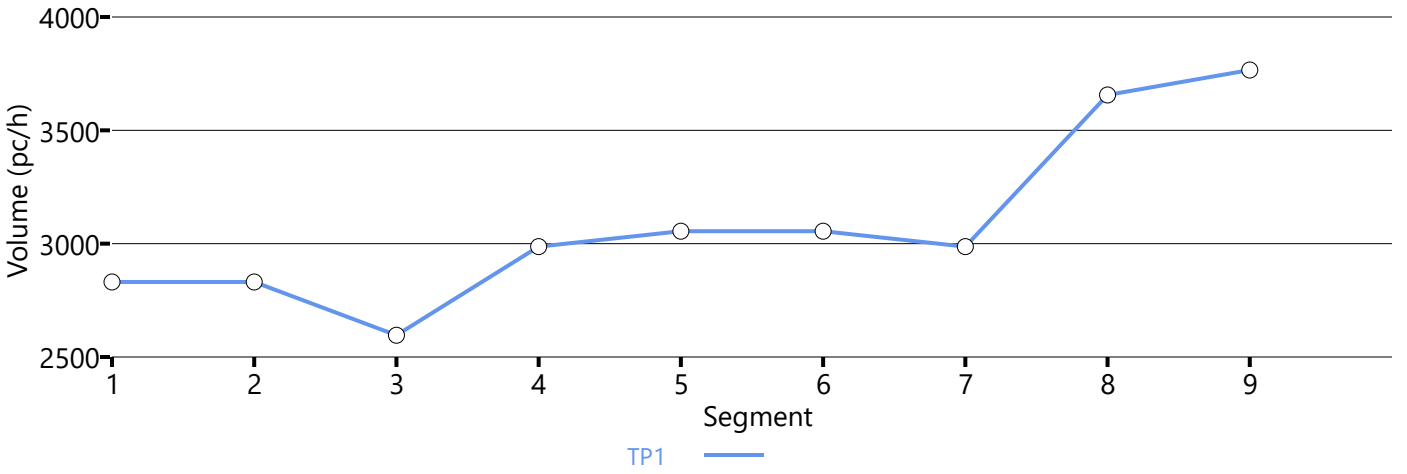
Space Mean Speed, mi/h	67.4	Density, veh/mi/ln	17.4
Average Travel Time, min	4.90	Density, pc/mi/ln	22.5

Messages

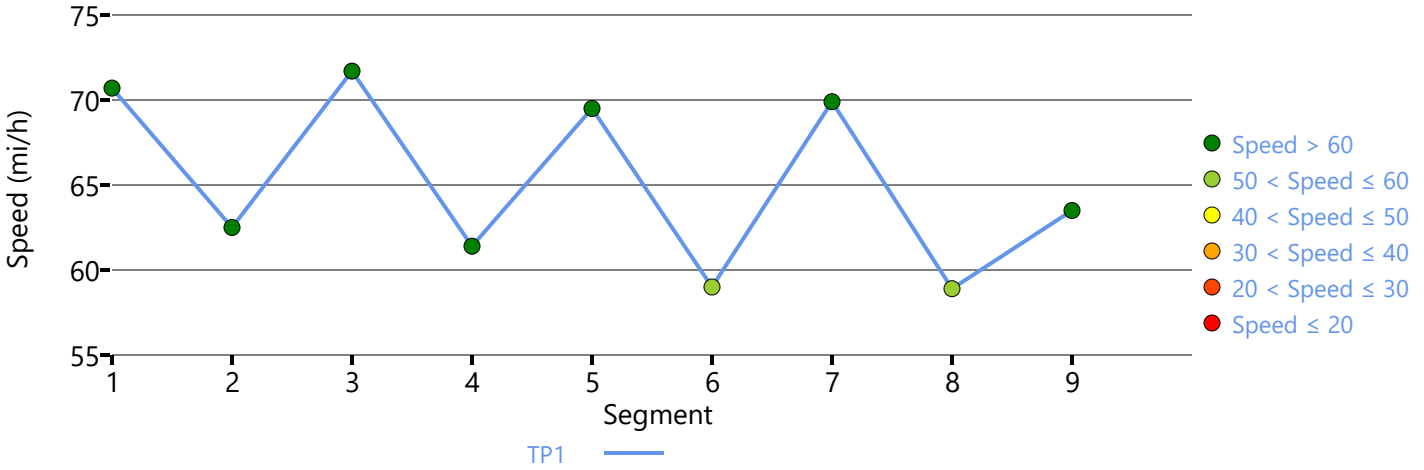
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

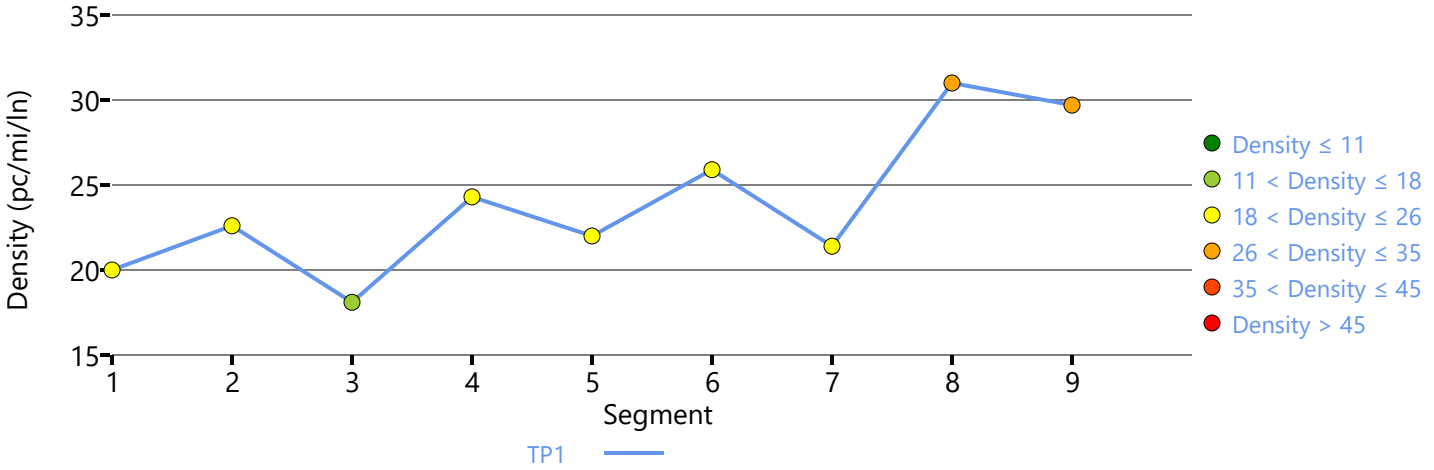
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	9/3/20
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	SB- AM Peak Hour - Existing Configuration
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start SB	300	2
2	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
3	Basic	Basic	N Green Ave (SH 74) Off to SH 74 (South) Off	21430	2
4	Diverge	Diverge	SH 74(South) Off	1500	2
5	Basic	Basic	SH 74(South) Off to SH 74(South) On	2380	2
6	Merge	Merge	SH 74(South) On	1500	2
7	Basic	Basic	Study Limit - End SB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.769	3830	4646	0.82	63.0	30.4	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.769	0.935	3830	664	4646	2130	0.82	0.31	65.9	65.9	29.1	33.6	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.725	3206	4646	0.69	69.0	23.2	C

Segment 4: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	

1	0.95	0.95	0.725	0.862	3206	416	4646	2033	0.69	0.20	62.6	62.6	25.6	29.1	D

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.725	2711	4646	0.58	72.0	18.8	C

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.725	0.862	2964	253	4646	2033	0.64	0.12	62.1	62.1	23.9	26.4	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.725	3011	4646	0.65	70.4	21.4	C

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	68.2	23.4	17.0	4.80	D

Facility Overall Results

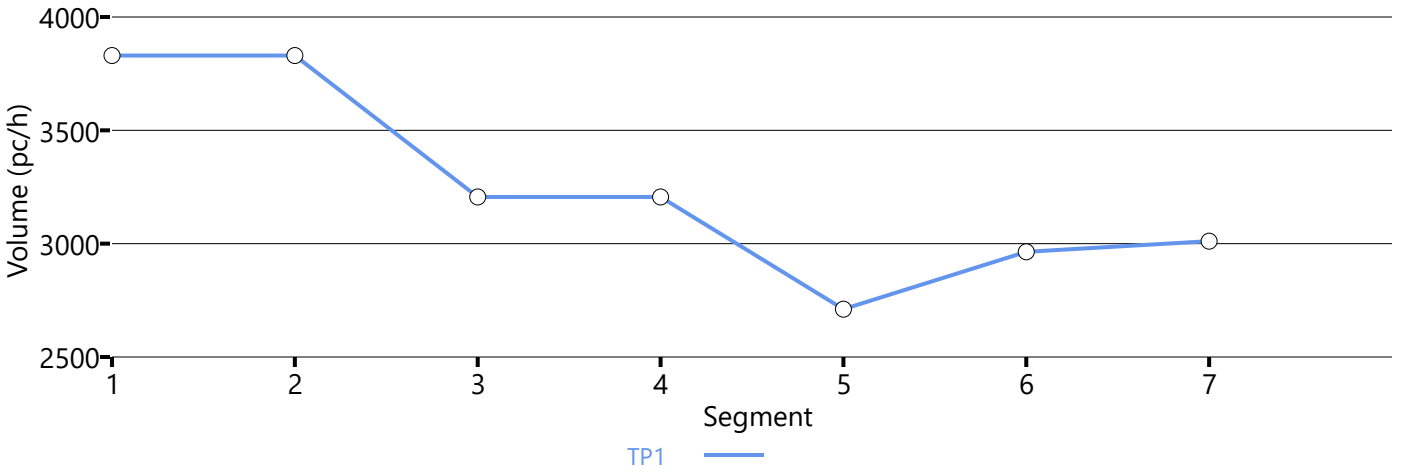
Space Mean Speed, mi/h	68.2	Density, veh/mi/ln	17.0
Average Travel Time, min	4.80	Density, pc/mi/ln	23.4

Messages

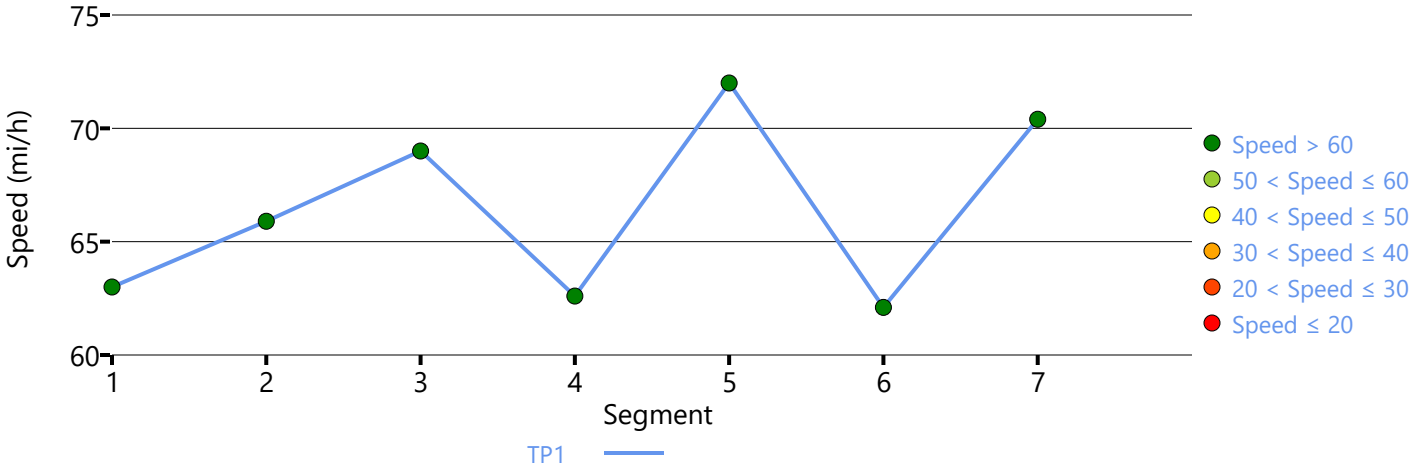
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

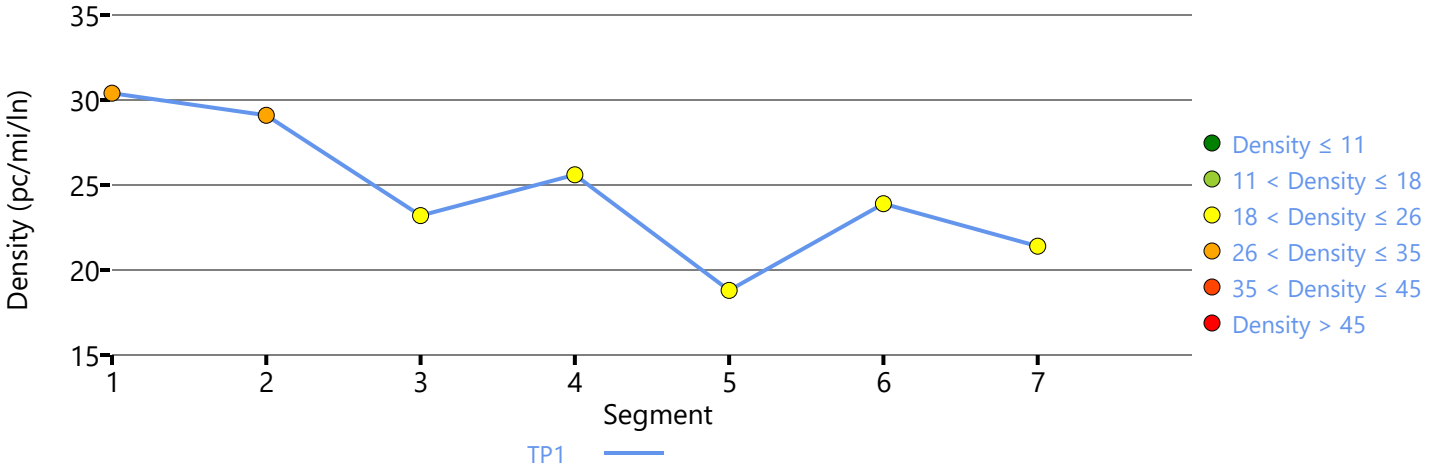
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	9/3/20
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	SB- PM Peak Hour - Existing Configuration
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	7
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start SB	300	2
2	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
3	Basic	Basic	N Green Ave (SH 74) Off to SH 74 (South) Off	21430	2
4	Diverge	Diverge	SH 74(South) Off	1500	2
5	Basic	Basic	SH 74(South) Off to SH 74(South) On	2380	2
6	Merge	Merge	SH 74(South) On	1500	2
7	Basic	Basic	Study Limit - End SB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.820	3105	4646	0.67	69.7	22.3	C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.820	0.952	3105	656	4646	2130	0.67	0.31	65.9	65.9	23.6	27.4	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.787	2442	4646	0.53	73.0	16.7	B

Segment 4: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	

1	0.95	0.95	0.787	0.935	2442	463	4646	2033	0.53	0.23	62.5	62.5	19.5	22.6	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.787	1893	4646	0.41	73.2	12.8	B

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.787	0.862	2200	307	4646	2033	0.47	0.15	63.4	63.4	17.4	20.4	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.787	2228	4646	0.48	71.3	15.2	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	71.3	17.0	13.4	4.60	C

Facility Overall Results

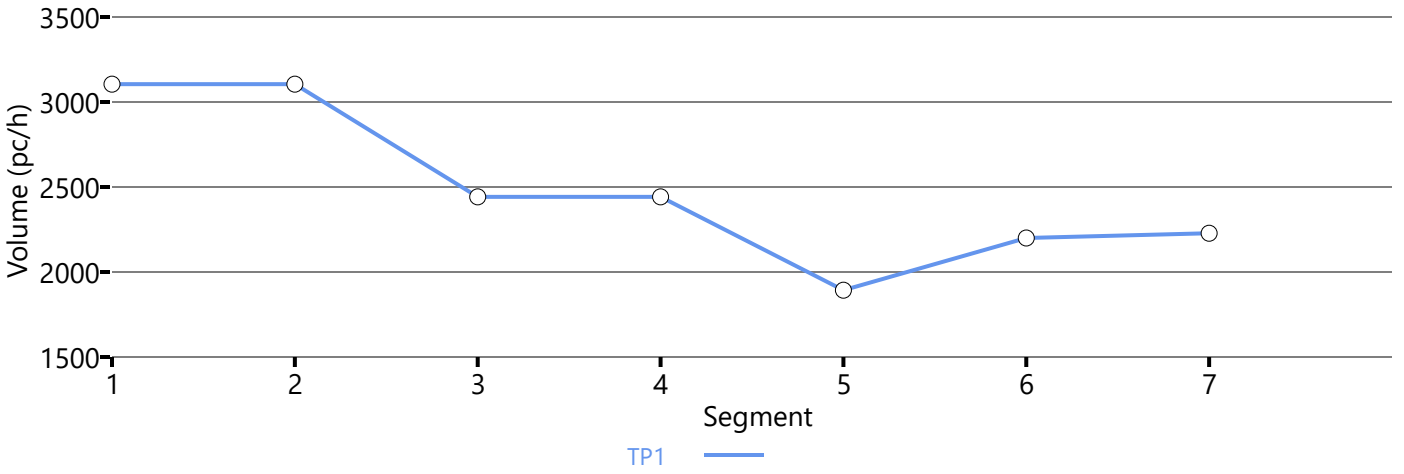
Space Mean Speed, mi/h	71.3	Density, veh/mi/ln	13.4
Average Travel Time, min	4.60	Density, pc/mi/ln	17.0

Messages

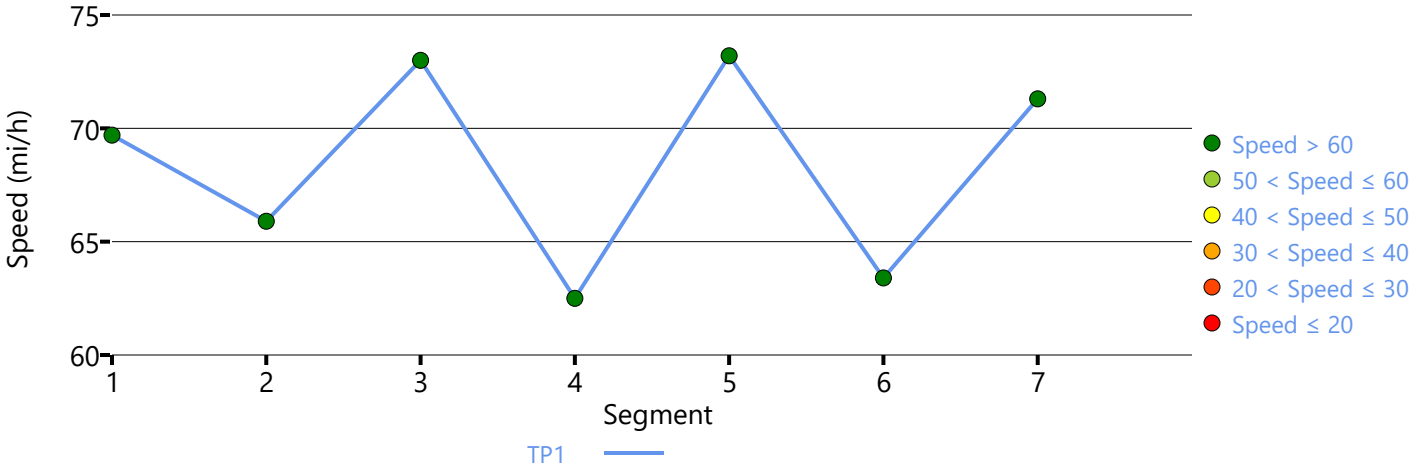
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

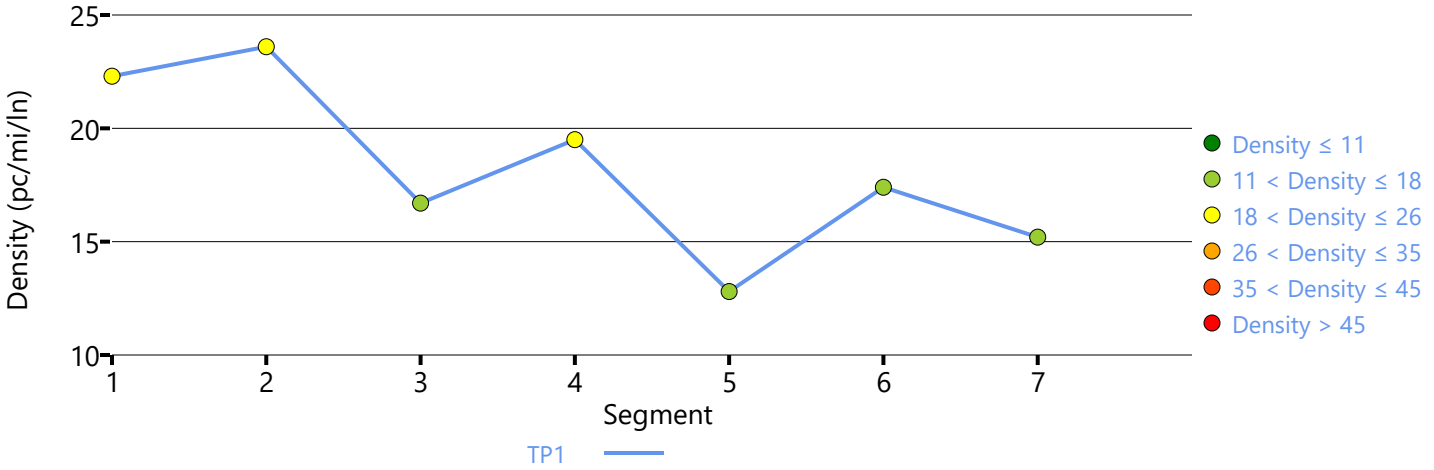
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	9/3/20
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	NB- AM Peak Hour - Alternative 1
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	9
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start NB	300	2
2	Diverge	Diverge	SH 74(South) Off	1500	2
3	Basic	Basic	SH 74(South) Off to SH 74(South) On	2410	2
4	Merge	Merge	SH 74(South) On	1500	2
5	Basic	Basic	SH 74(South) On to N Green Ave(SH 74) Off	17205	2
6	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
7	Basic	Basic	N Green Ave (SH 74) Off to N Green Ave (SH 74) On	2740	2
8	Merge	Merge	N Green Ave (SH 74) On	1500	2
9	Basic	Basic	Study Limit - End NB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.741	2377	4646	0.51	72.3	16.4	B

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.741	0.901	2377	242	4646	2033	0.51	0.12	62.4	62.4	19.0	22.4	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.741	2083	4646	0.45	72.2	14.4	B

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.741	0.885	2565	482	4646	2033	0.55	0.24	62.3	62.3	20.6	23.0	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.741	2658	4646	0.57	71.5	18.6	C

Segment 6: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.741	0.962	2658	47	4646	1936	0.57	0.02	59.0	59.0	22.5	24.2	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	2483	4646	0.53	72.0	17.2	B

Segment 8: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.962	3130	647	4646	2130	0.67	0.30	60.8	60.8	25.7	28.3	D

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	3286	4646	0.71	67.9	24.2	C

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	69.0	18.9	14.1	4.80	C

Facility Overall Results

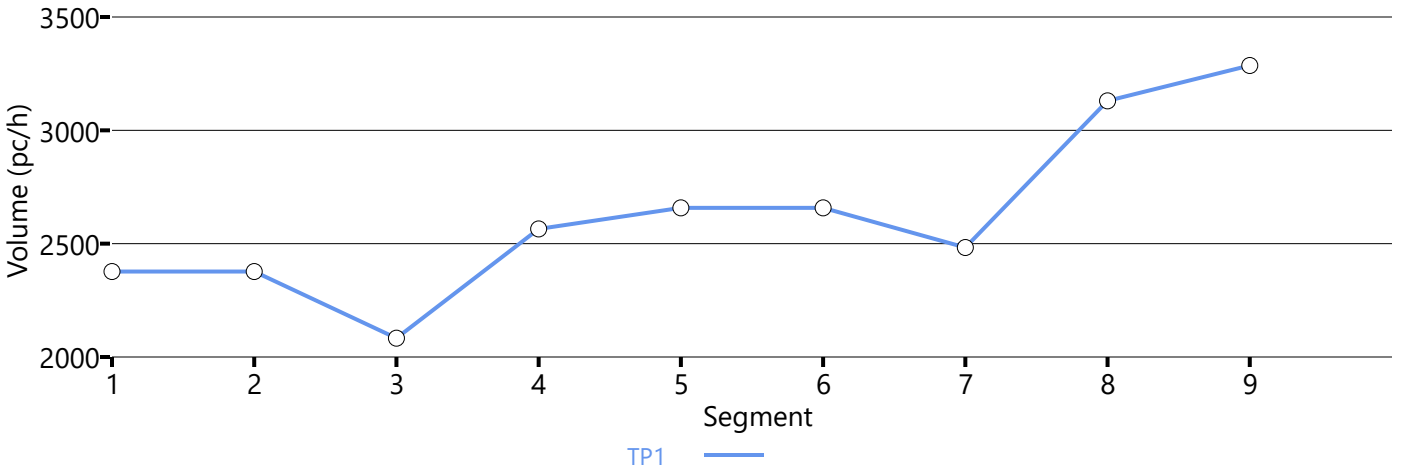
Space Mean Speed, mi/h	69.0	Density, veh/mi/ln	14.1
Average Travel Time, min	4.80	Density, pc/mi/ln	18.9

Messages

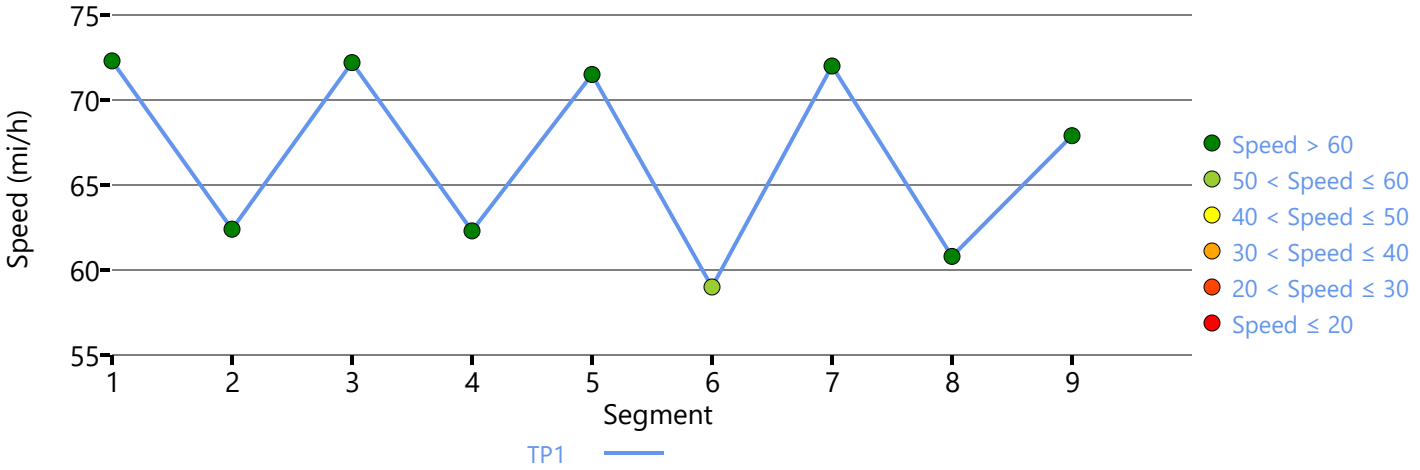
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

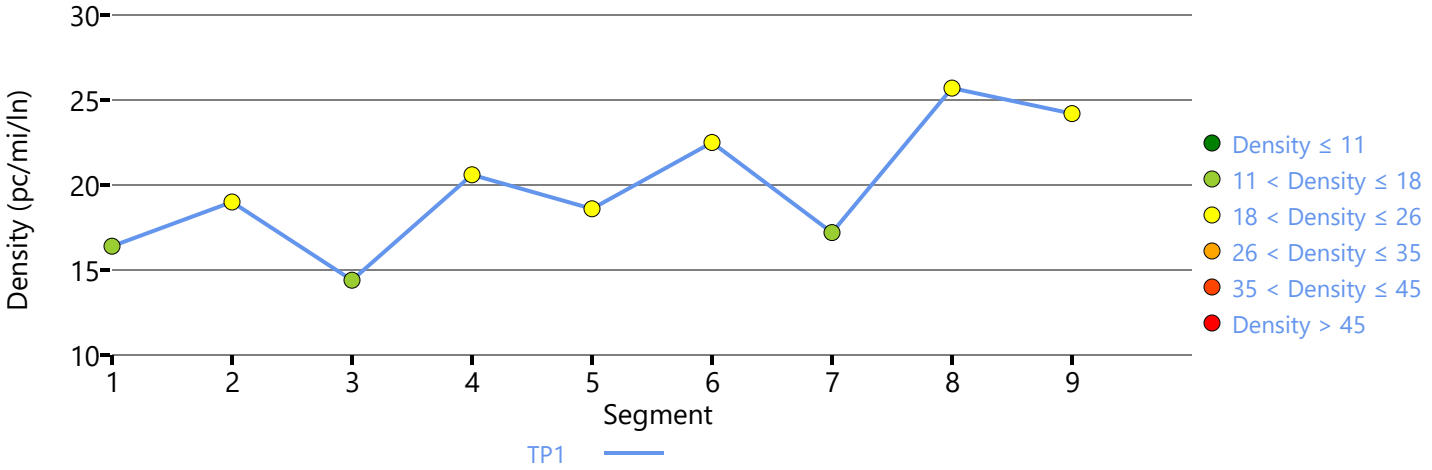
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	10/1/20
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	NB- PM Peak Hour - Alternative 1
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	9
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start NB	300	2
2	Diverge	Diverge	SH 74(South) Off	1500	2
3	Basic	Basic	SH 74(South) Off to SH 74(South) On	2410	2
4	Merge	Merge	SH 74(South) On	1500	2
5	Basic	Basic	SH 74(South) On to N Green Ave(SH 74) Off	17205	2
6	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
7	Basic	Basic	N Green Ave (SH 74) Off to N Green Ave (SH 74) On	2740	2
8	Merge	Merge	N Green Ave (SH 74) On	1500	2
9	Basic	Basic	Study Limit - End NB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	2831	4646	0.61	70.7	20.0	C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.909	2831	200	4646	2033	0.61	0.10	62.5	62.5	22.6	26.3	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	2596	4646	0.56	71.7	18.1	C

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.909	2987	391	4646	2033	0.64	0.19	61.4	61.4	24.3	26.3	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	3055	4646	0.66	69.5	22.0	C

Segment 6: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.943	3055	37	4646	1936	0.66	0.02	59.0	59.0	25.9	27.6	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.781	2987	4646	0.64	69.9	21.4	C

Segment 8: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.781	0.909	3656	669	4646	2130	0.79	0.31	58.9	58.9	31.0	32.4	D

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.781	3766	4646	0.81	63.5	29.7	D

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	67.4	22.5	17.4	4.90	D

Facility Overall Results

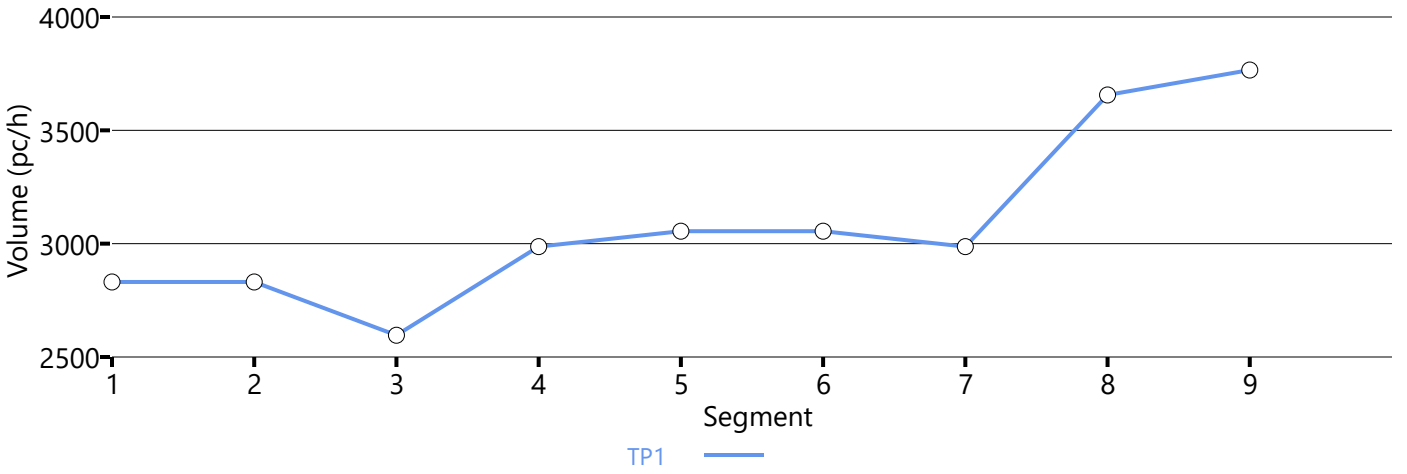
Space Mean Speed, mi/h	67.4	Density, veh/mi/ln	17.4
Average Travel Time, min	4.90	Density, pc/mi/ln	22.5

Messages

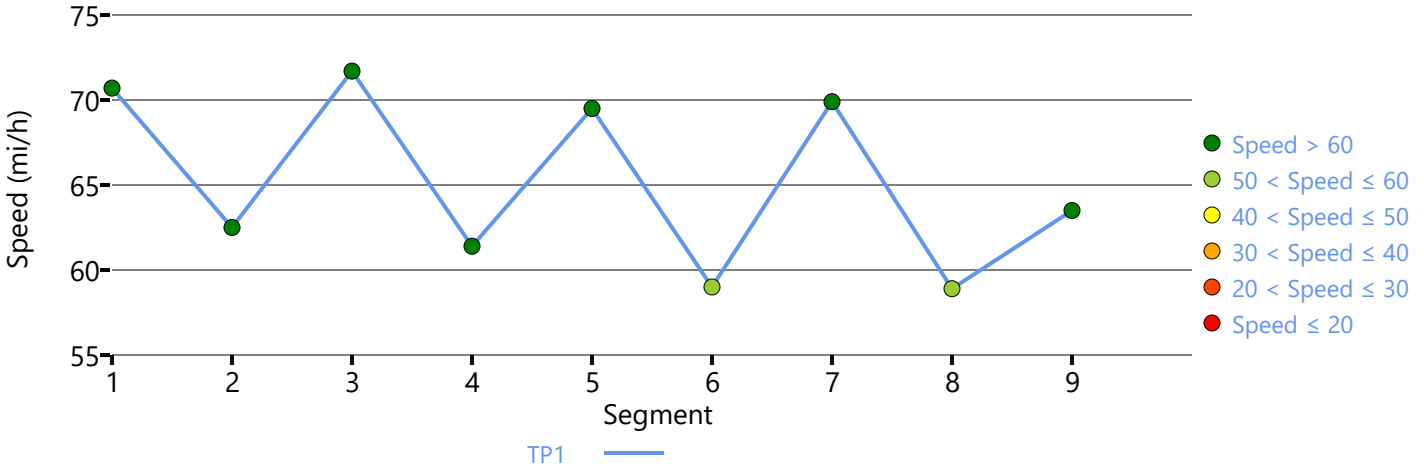
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

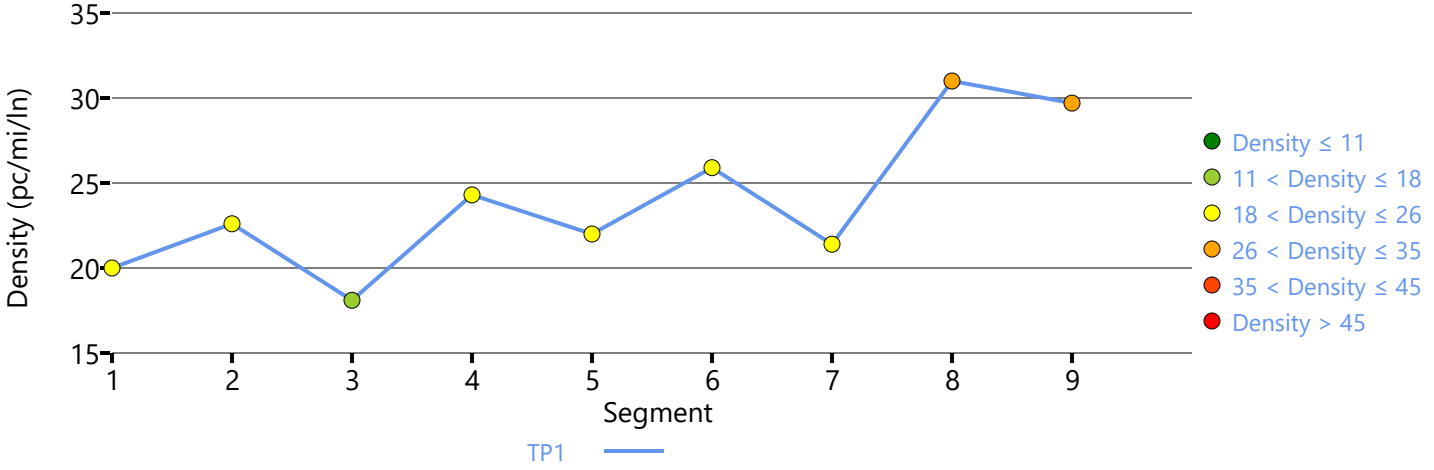
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	9/3/20
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	SB - AM Peak Hour - Alternative 1
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	9
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start SB	300	2
2	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
3	Basic	Basic	N Green Ave (SH 74) Off to Grant St On	7600	2
4	Merge	Merge	Grant St On	1500	2
5	Basic	Basic	Grant St On to SH 74 (South) Off	12330	2
6	Diverge	Diverge	SH 74(South) Off	1500	2
7	Basic	Basic	SH 74(South) Off to SH 74(South) On	2380	2
8	Merge	Merge	SH 74(South) On	1500	2
9	Basic	Basic	Study Limit - End SB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.769	3830	4646	0.82	63.0	30.4	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.769	0.935	3830	664	4646	2130	0.82	0.31	65.9	65.9	29.1	33.6	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.769	3022	4646	0.65	70.3	21.5	C

Segment 4: Merge

Time	PHF	fHV	Flow Rate	Capacity	d/c	Speed	Density	LOS

Period					(pc/h)		(pc/h)		Ratio		(mi/h)		(pc/mi/ln)		
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.769	0.943	3061	39	4646	1936	0.66	0.02	61.5	61.5	24.9	27.5	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.725	3257	4646	0.70	68.6	23.7	C

Segment 6: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.725	0.862	3257	416	4646	2033	0.70	0.20	62.6	62.6	26.0	29.6	D

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.725	2762	4646	0.59	71.8	19.2	C

Segment 8: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.725	0.862	2972	210	4646	2033	0.64	0.10	62.1	62.1	23.9	26.4	C

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.725	3011	4646	0.65	70.4	21.4	C

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	67.9	23.3	17.3	4.80	D

Facility Overall Results

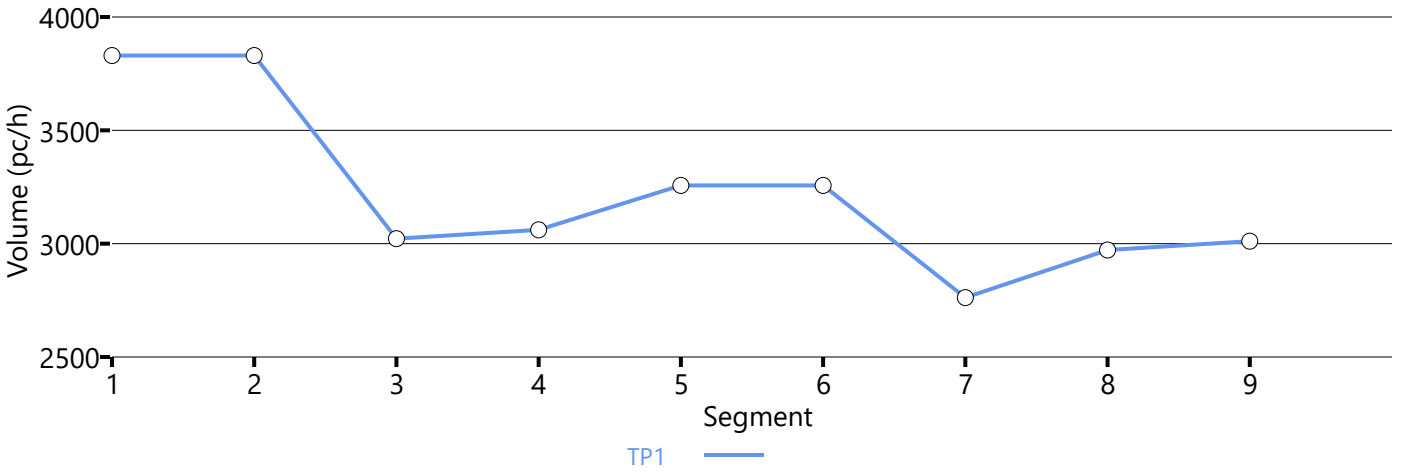
Space Mean Speed, mi/h	67.9	Density, veh/mi/ln	17.3
Average Travel Time, min	4.80	Density, pc/mi/ln	23.3

Messages

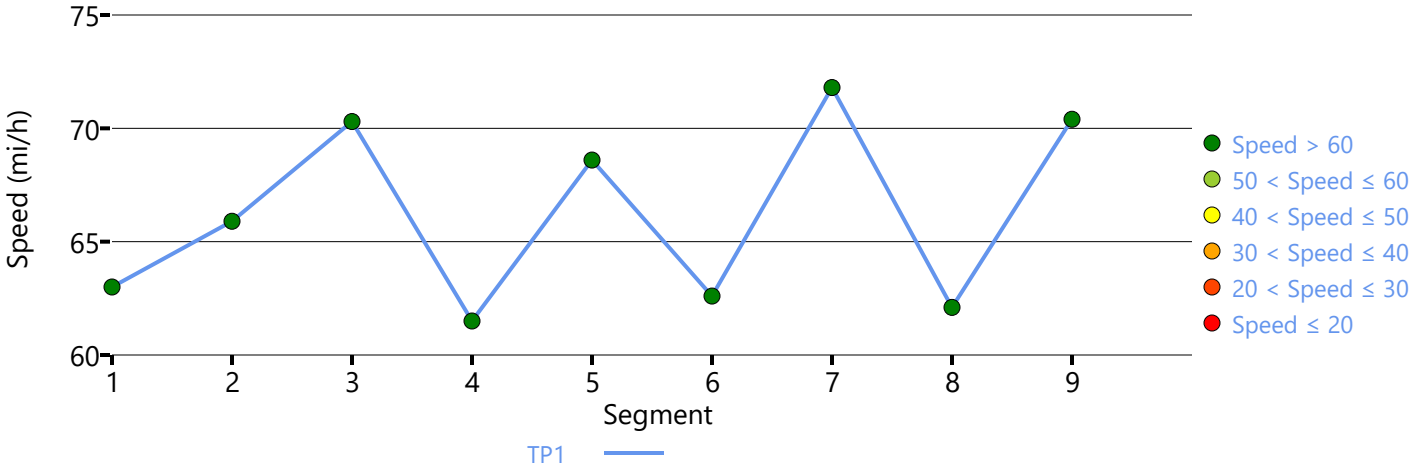
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

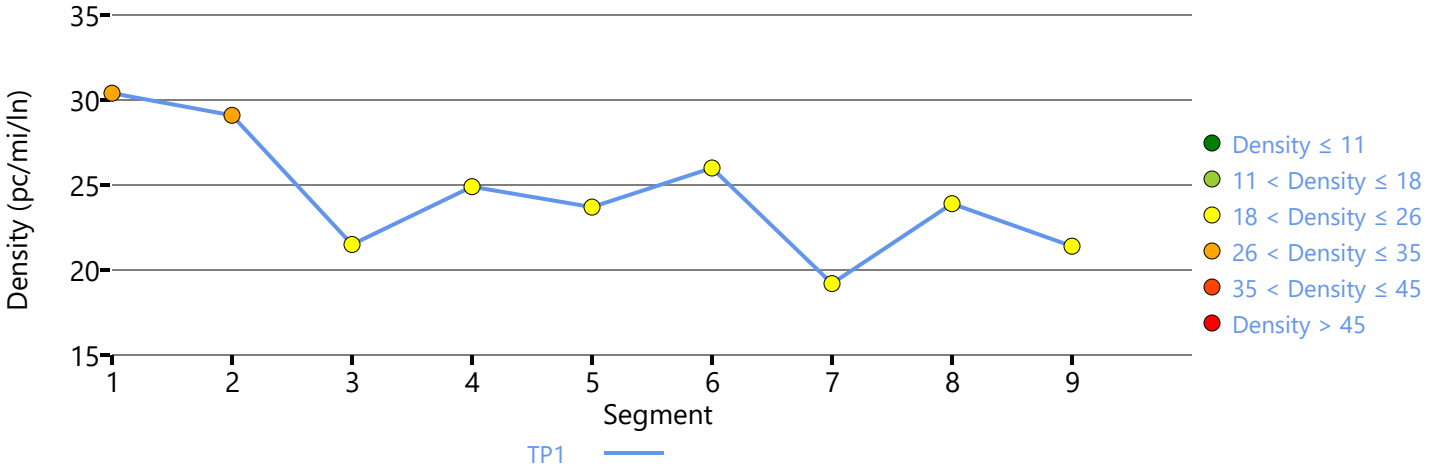
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	9/3/20
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	SB - PM Peak Hour - Alternative 1
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	9
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start SB	300	2
2	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
3	Basic	Basic	N Green Ave (SH 74) Off to Grant St On	7600	2
4	Merge	Merge	Grant St On	1500	2
5	Basic	Basic	Grant St On to SH 74 (South) Off	12330	2
6	Diverge	Diverge	SH 74(South) Off	1500	2
7	Basic	Basic	SH 74(South) Off to SH 74(South) On	2380	2
8	Merge	Merge	SH 74(South) On	1500	2
9	Basic	Basic	Study Limit - End SB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.820	3105	4646	0.67	69.7	22.3	C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.820	0.952	3105	656	4646	2130	0.67	0.31	65.9	65.9	23.6	27.4	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.820	2344	4646	0.50	73.3	16.0	B

Segment 4: Merge

Time	PHF	fHV	Flow Rate	Capacity	d/c	Speed	Density	LOS

Period					(pc/h)		(pc/h)		Ratio		(mi/h)		(pc/mi/ln)		
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.820	0.962	2390	46	4646	1936	0.51	0.02	62.8	62.8	19.0	22.3	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.787	2498	4646	0.54	72.8	17.2	B

Segment 6: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.787	0.935	2498	463	4646	2033	0.54	0.23	62.5	62.5	20.0	23.0	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.787	1949	4646	0.42	73.2	13.2	B

Segment 8: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.787	0.862	2204	255	4646	2033	0.47	0.13	63.4	63.4	17.4	20.4	C

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.787	2228	4646	0.48	71.3	15.2	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	70.7	17.2	13.7	4.60	C

Facility Overall Results

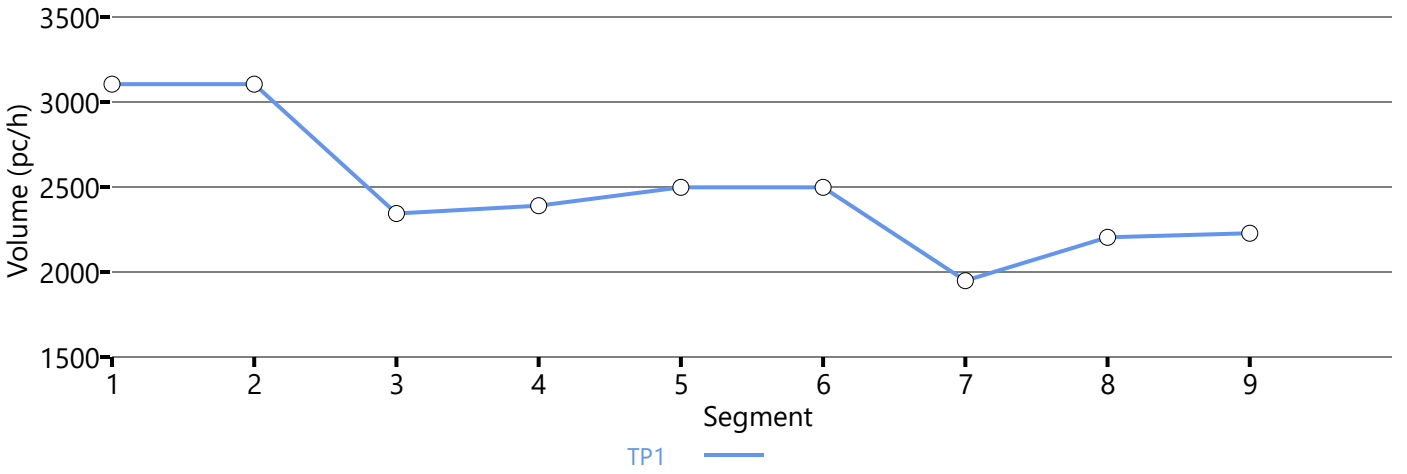
Space Mean Speed, mi/h	70.7	Density, veh/mi/ln	13.7
Average Travel Time, min	4.60	Density, pc/mi/ln	17.2

Messages

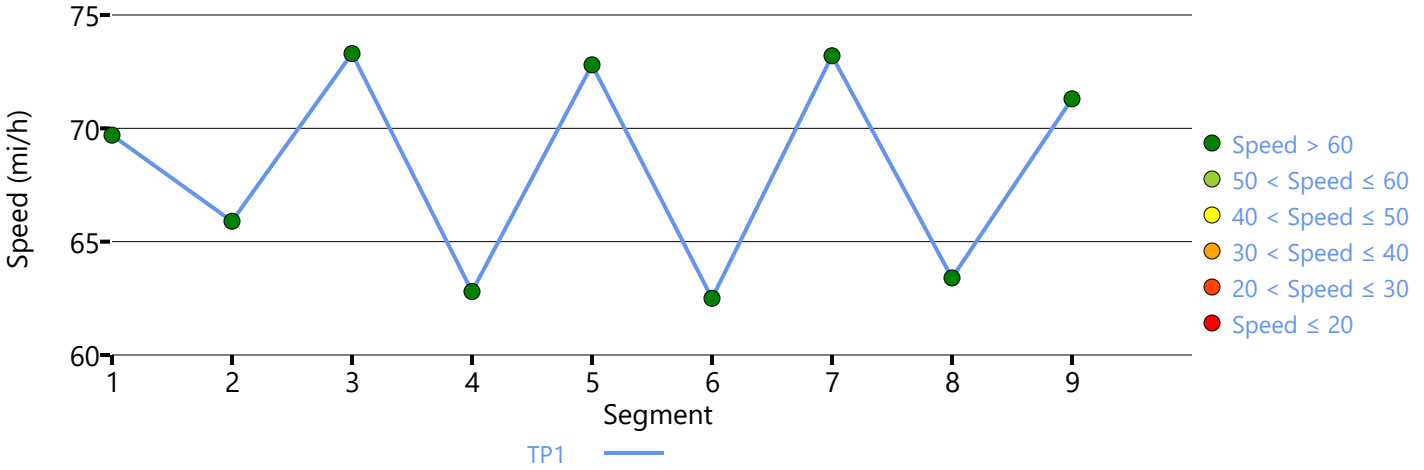
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

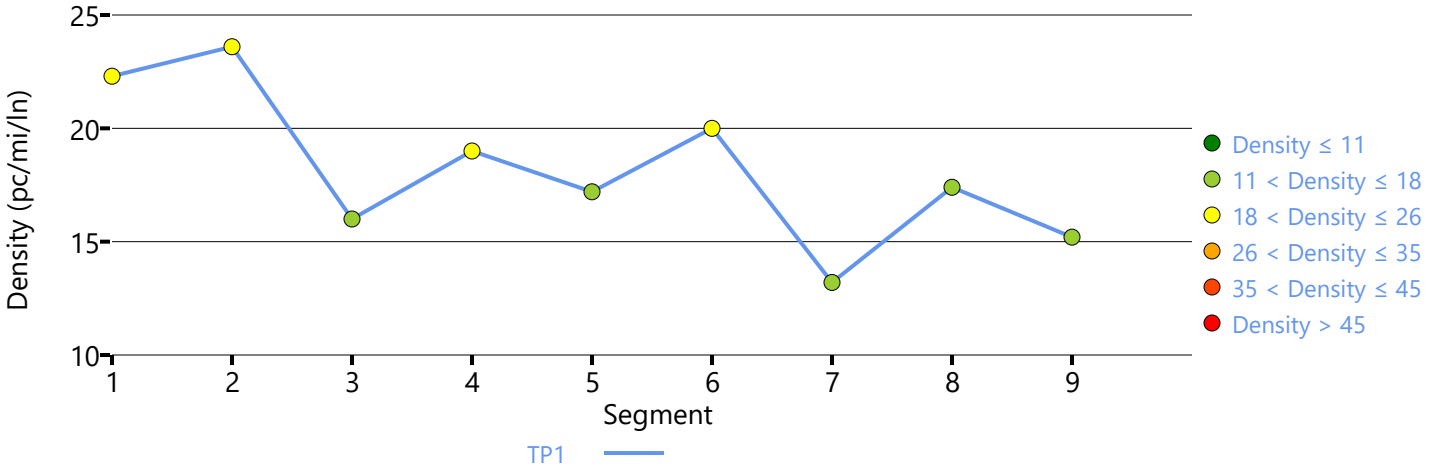
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	10/1/10
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	NB- AM Peak Hour - Alternative 2.1
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	11
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start NB	300	2
2	Diverge	Diverge	SH 74 (South) Off	1500	2
3	Basic	Basic	SH 74 (South) Off to SH 74 (South) On	2410	2
4	Merge	Merge	SH 74 (South) On	1500	2
5	Basic	Basic	SH 74 (South) On to Grant St Off	11905	2
6	Diverge	Diverge	Grant St Off	1500	2
7	Basic	Basic	Grant St Off to N Green Ave (SH 74) Off	3800	2
8	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
9	Basic	Basic	N Green Ave (SH 74) Off to N Green Ave (SH 74) On	2740	2
10	Merge	Merge	N Green Ave (SH 74) On	1500	2
11	Basic	Basic	Study Limit - End NB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.741	2377	4646	0.51	72.3	16.4	B

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.741	0.901	2377	242	4646	2033	0.51	0.12	62.4	62.4	19.0	22.4	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS

1	0.95		0.741		2083		4646		0.45		72.2		14.4	B

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.741	0.885	2565	482	4646	2033	0.55	0.24	62.3	62.3	20.6	23.0	C

Segment 5: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	0.95		0.741		2658		4646		0.57		71.5		18.6		C

Segment 6: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.741	0.962	2658	37	4646	1936	0.57	0.02	59.0	59.0	22.5	24.4	C

Segment 7: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	0.95		0.775		2495		4646		0.54		72.0		17.3		B

Segment 8: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.962	2495	10	4646	1936	0.54	0.01	59.1	59.1	21.1	22.8	C

Segment 9: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	0.95		0.775		2483		4646		0.53		72.0		17.2		B

Segment 10: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.962	3130	647	4646	2130	0.67	0.30	60.8	60.8	25.7	28.3	D

Segment 11: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	0.95		0.775		3286		4646		0.71		67.9		24.2		C

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	68.3	18.8	14.2	4.80	C

Facility Overall Results

Space Mean Speed, mi/h	68.3	Density, veh/mi/ln	14.2

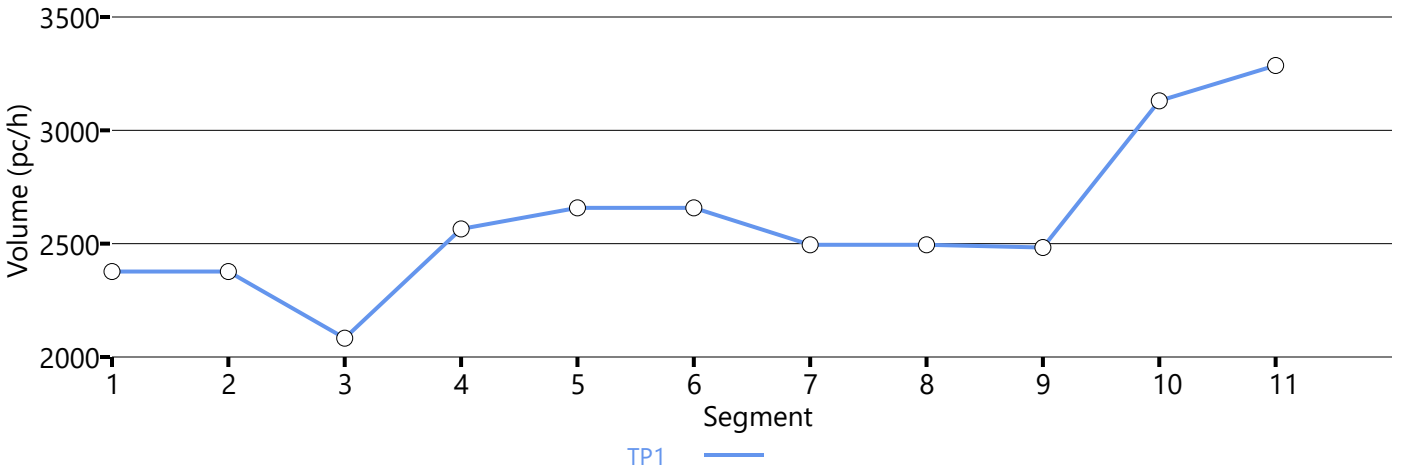
Average Travel Time, min	4.80	Density, pc/mi/ln	18.8

Messages

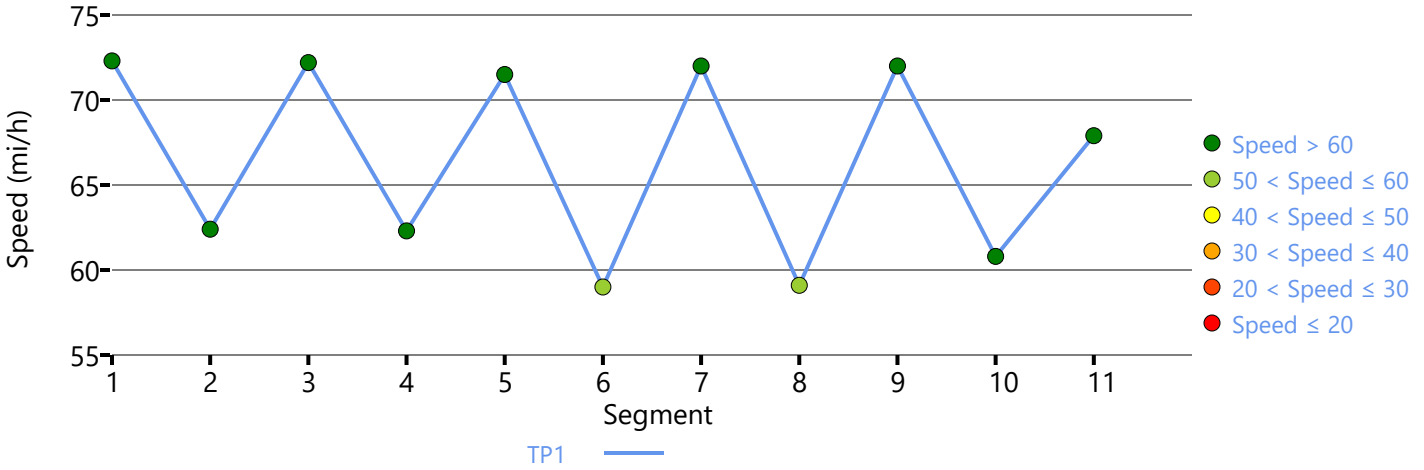
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

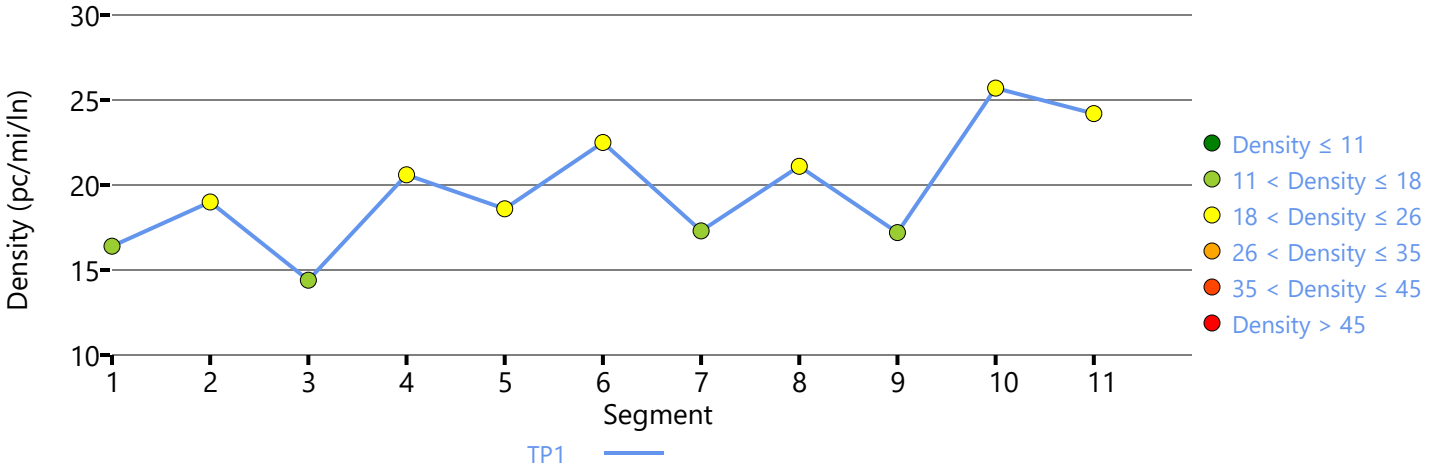
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	9/3/20
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	NB- PM Peak Hour - Alternative 2.1
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	11
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start NB	300	2
2	Diverge	Diverge	SH 74 (South) Off	1500	2
3	Basic	Basic	SH 74 (South) Off to SH 74 (South) On	2410	2
4	Merge	Merge	SH 74 (South) On	1500	2
5	Basic	Basic	SH 74 (South) On to Grant St Off	11905	2
6	Diverge	Diverge	Grant St Off	1500	2
7	Basic	Basic	Grant St Off to N Green Ave (SH 74) Off	3800	2
8	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
9	Basic	Basic	N Green Ave (SH 74) Off to N Green Ave (SH 74) On	2740	2
10	Merge	Merge	N Green Ave (SH 74) On	1500	2
11	Basic	Basic	Study Limit - End NB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	2831	4646	0.61	70.7	20.0	C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.909	2831	200	4646	2033	0.61	0.10	62.5	62.5	22.6	26.3	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS

1	0.95		0.775		2596		4646		0.56		71.7		18.1	C

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.909	2987	391	4646	2033	0.64	0.19	61.4	61.4	24.3	26.3	C

Segment 5: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	0.95		0.775		3055		4646		0.66		69.5		22.0		C

Segment 6: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.943	3055	29	4646	1936	0.66	0.01	59.1	59.1	25.8	27.8	C

Segment 7: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	0.95		0.781		2996		4646		0.64		69.8		21.5		C

Segment 8: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.781	0.943	2996	8	4646	1936	0.64	0.00	59.1	59.1	25.3	27.1	C

Segment 9: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	0.95		0.781		2987		4646		0.64		69.9		21.4		C

Segment 10: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.781	0.909	3656	669	4646	2130	0.79	0.31	58.9	58.9	31.0	32.4	D

Segment 11: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	0.95		0.781		3766		4646		0.81		63.5		29.7		D

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	66.9	22.6	17.5	4.90	D

Facility Overall Results

Space Mean Speed, mi/h	66.9	Density, veh/mi/ln	17.5

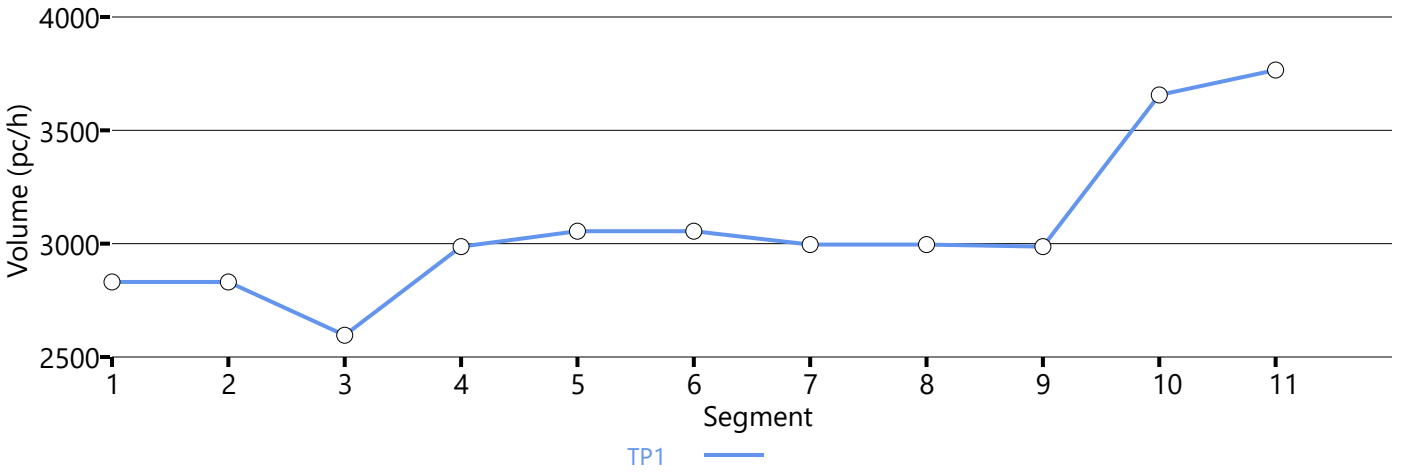
Average Travel Time, min	4.90	Density, pc/mi/ln	22.6

Messages

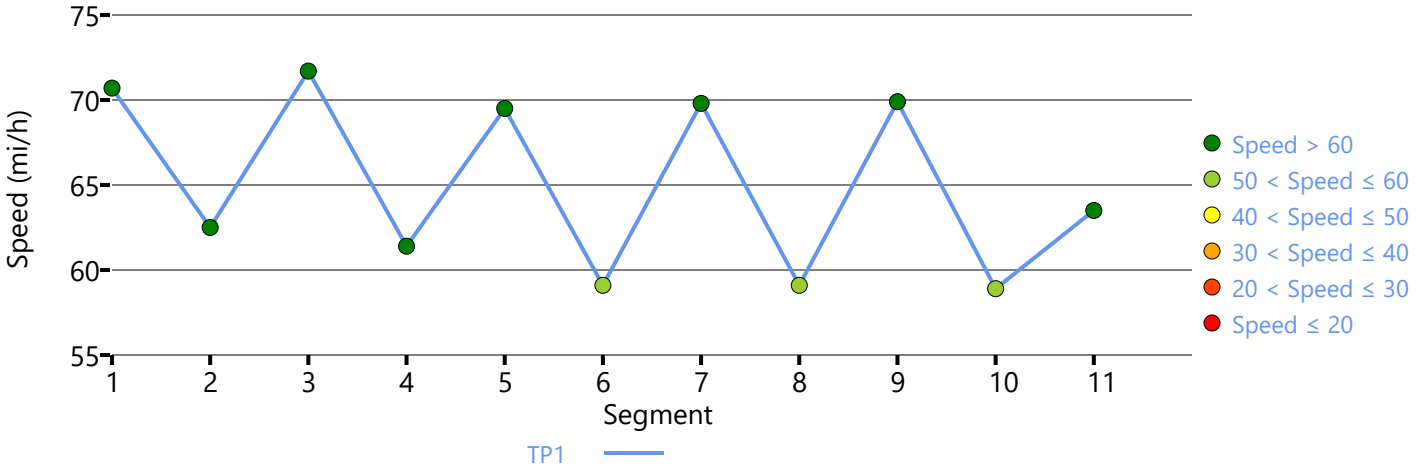
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

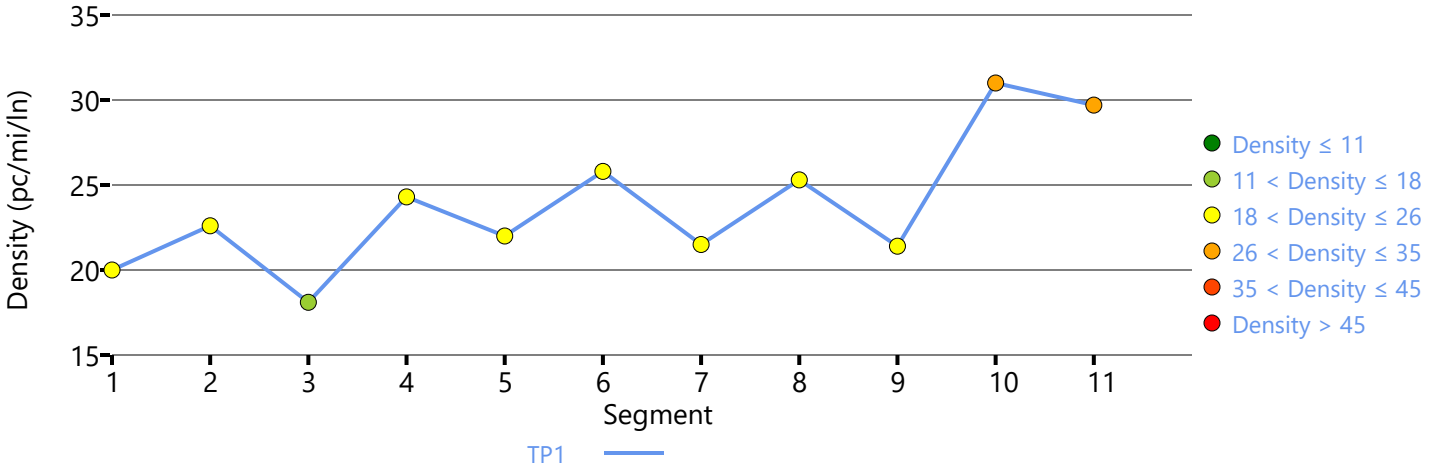
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	10/1/20
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	SB - AM Peak Hour - Alternative 2.1
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	9
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start SB	300	2
2	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
3	Basic	Basic	N Green Ave (SH 74) Off to Grant St On	7600	2
4	Merge	Merge	Grant St On	1500	2
5	Basic	Basic	Grant St On to SH 74 (South) Off	12330	2
6	Diverge	Diverge	SH 74(South) Off	1500	2
7	Basic	Basic	SH 74(South) Off to SH 74(South) On	2380	2
8	Merge	Merge	SH 74(South) On	1500	2
9	Basic	Basic	Study Limit - End SB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.769	3830	4646	0.82	63.0	30.4	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.769	0.935	3830	664	4646	2130	0.82	0.31	65.9	65.9	29.1	33.6	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.769	3022	4646	0.65	70.3	21.5	C

Segment 4: Merge

Time	PHF	fHV	Flow Rate	Capacity	d/c	Speed	Density	LOS

Period					(pc/h)		(pc/h)		Ratio		(mi/h)		(pc/mi/ln)		
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.769	0.943	3061	39	4646	1936	0.66	0.02	61.5	61.5	24.9	27.5	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.725	3257	4646	0.70	68.6	23.7	C

Segment 6: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.725	0.862	3257	416	4646	2033	0.70	0.20	62.6	62.6	26.0	29.6	D

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.725	2762	4646	0.59	71.8	19.2	C

Segment 8: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.725	0.862	2972	210	4646	2033	0.64	0.10	62.1	62.1	23.9	26.4	C

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.725	3011	4646	0.65	70.4	21.4	C

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	67.9	23.3	17.3	4.80	D

Facility Overall Results

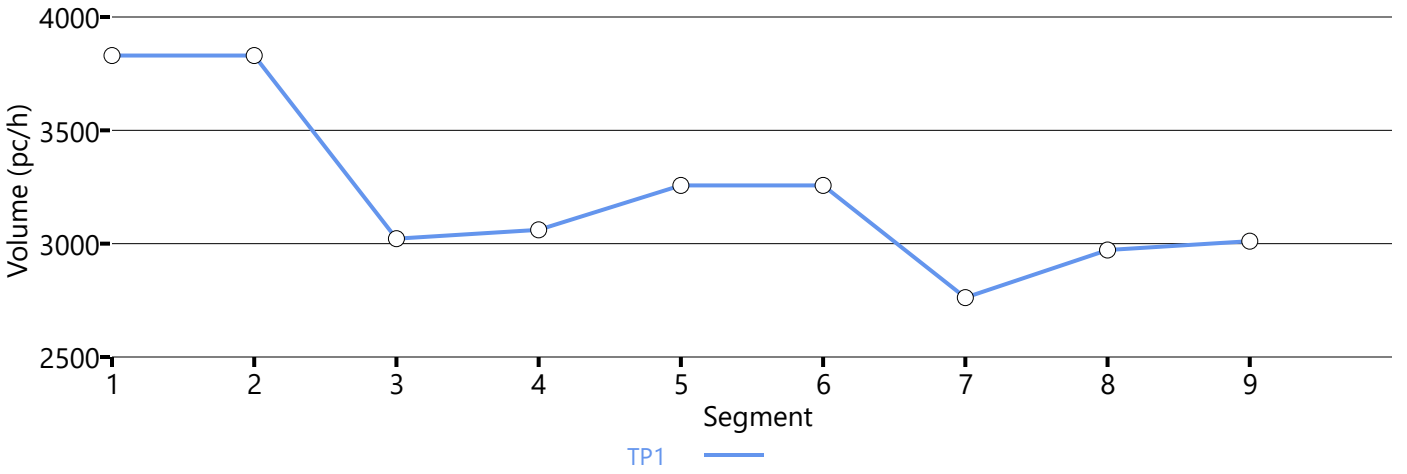
Space Mean Speed, mi/h	67.9	Density, veh/mi/ln	17.3
Average Travel Time, min	4.80	Density, pc/mi/ln	23.3

Messages

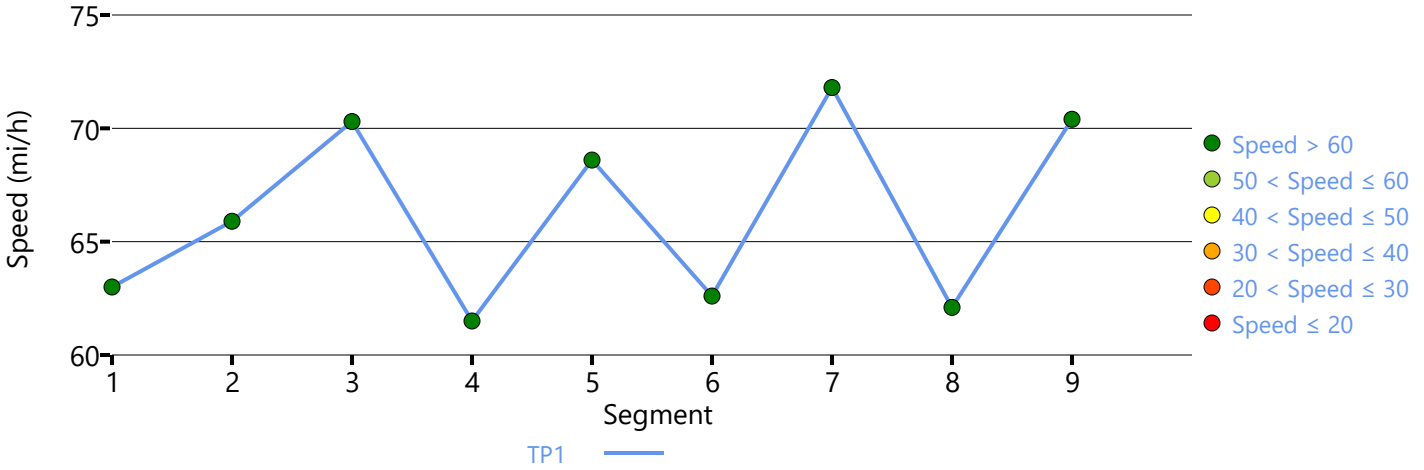
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

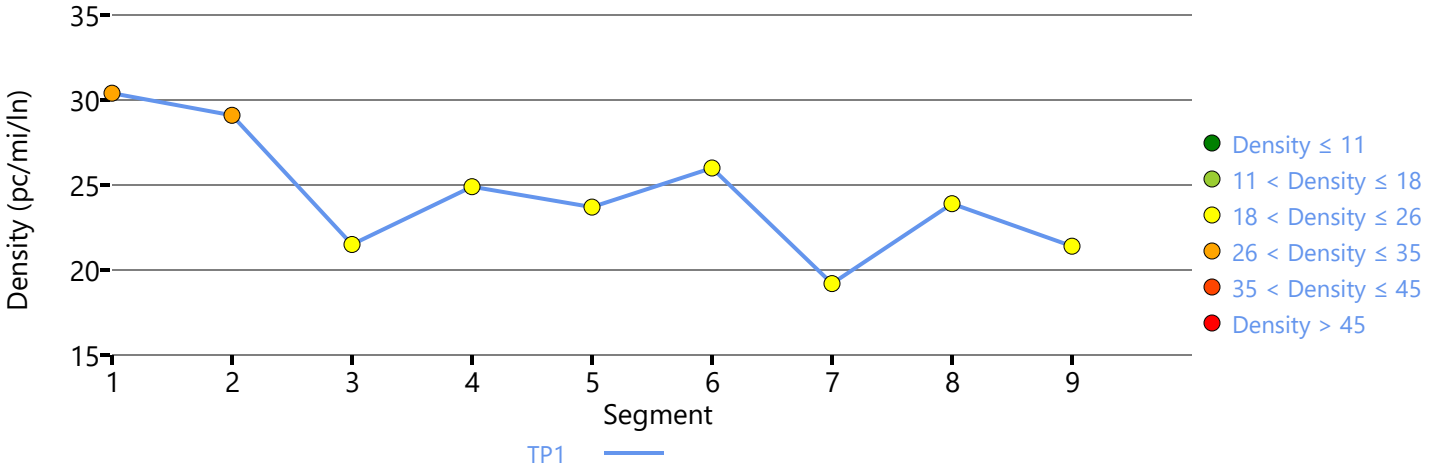
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	10/1/20
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	SB - PM Peak Hour - Alternative 2.2
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	9
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start SB	300	2
2	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
3	Basic	Basic	N Green Ave (SH 74) Off to Grant St On	7600	2
4	Merge	Merge	Grant St On	1500	2
5	Basic	Basic	Grant St On to SH 74 (South) Off	12330	2
6	Diverge	Diverge	SH 74(South) Off	1500	2
7	Basic	Basic	SH 74(South) Off to SH 74(South) On	2380	2
8	Merge	Merge	SH 74(South) On	1500	2
9	Basic	Basic	Study Limit - End SB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.820	3105	4646	0.67	69.7	22.3	C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.820	0.952	3105	656	4646	2130	0.67	0.31	65.9	65.9	23.6	27.4	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.820	2344	4646	0.50	73.3	16.0	B

Segment 4: Merge

Time	PHF	fHV	Flow Rate	Capacity	d/c	Speed	Density	LOS

Period					(pc/h)		(pc/h)		Ratio		(mi/h)		(pc/mi/ln)		
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.820	0.962	2390	46	4646	1936	0.51	0.02	62.8	62.8	19.0	22.3	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.787	2498	4646	0.54	72.8	17.2	B

Segment 6: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.787	0.935	2498	463	4646	2033	0.54	0.23	62.5	62.5	20.0	23.0	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.787	1949	4646	0.42	73.2	13.2	B

Segment 8: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.787	0.862	2204	255	4646	2033	0.47	0.13	63.4	63.4	17.4	20.4	C

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.787	2228	4646	0.48	71.3	15.2	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	70.7	17.2	13.7	4.60	C

Facility Overall Results

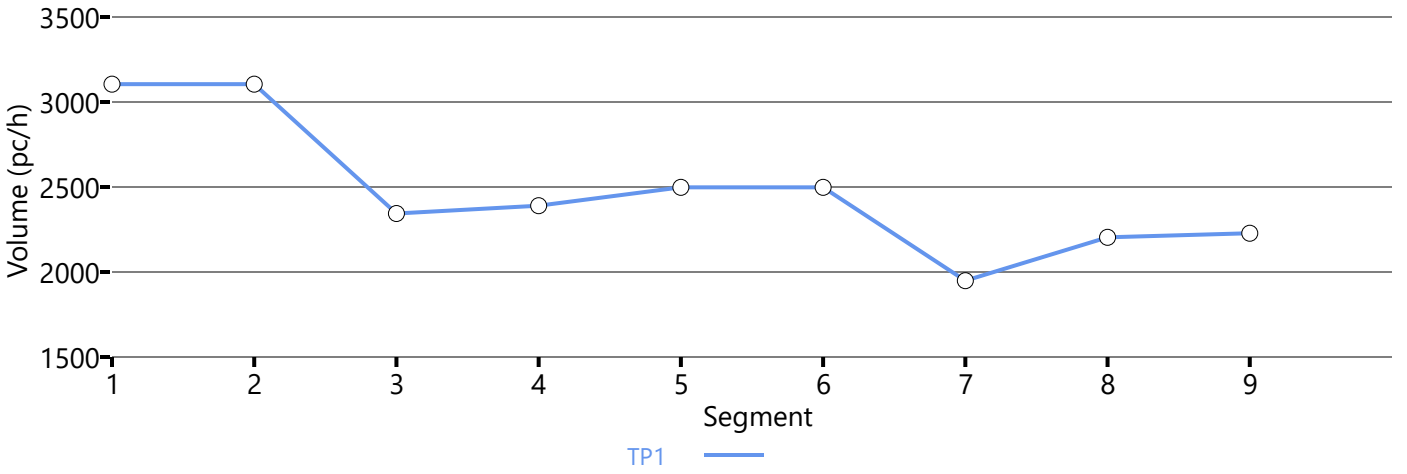
Space Mean Speed, mi/h	70.7	Density, veh/mi/ln	13.7
Average Travel Time, min	4.60	Density, pc/mi/ln	17.2

Messages

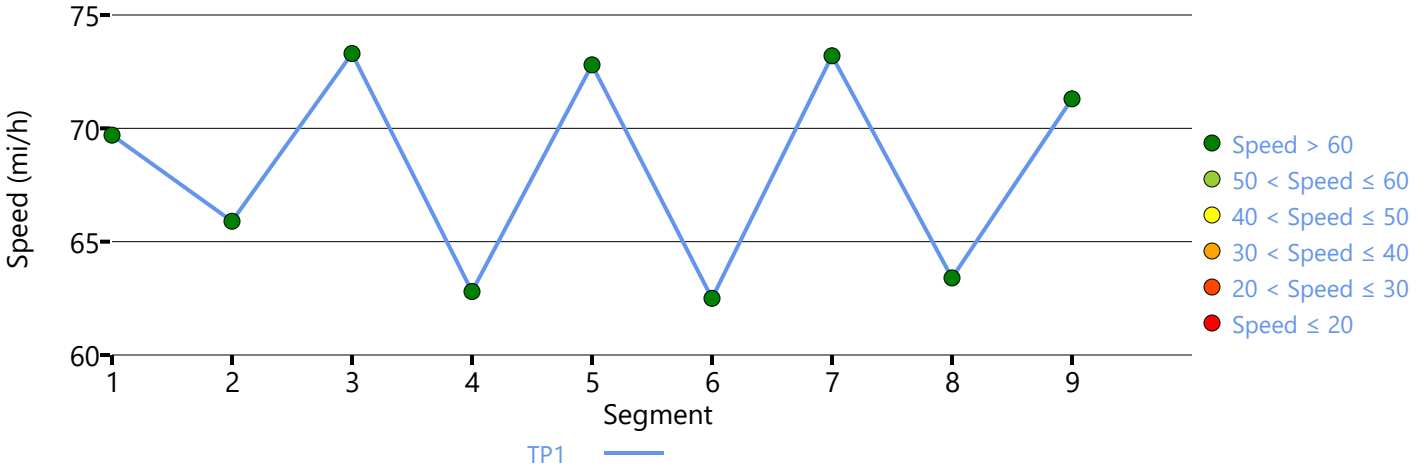
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

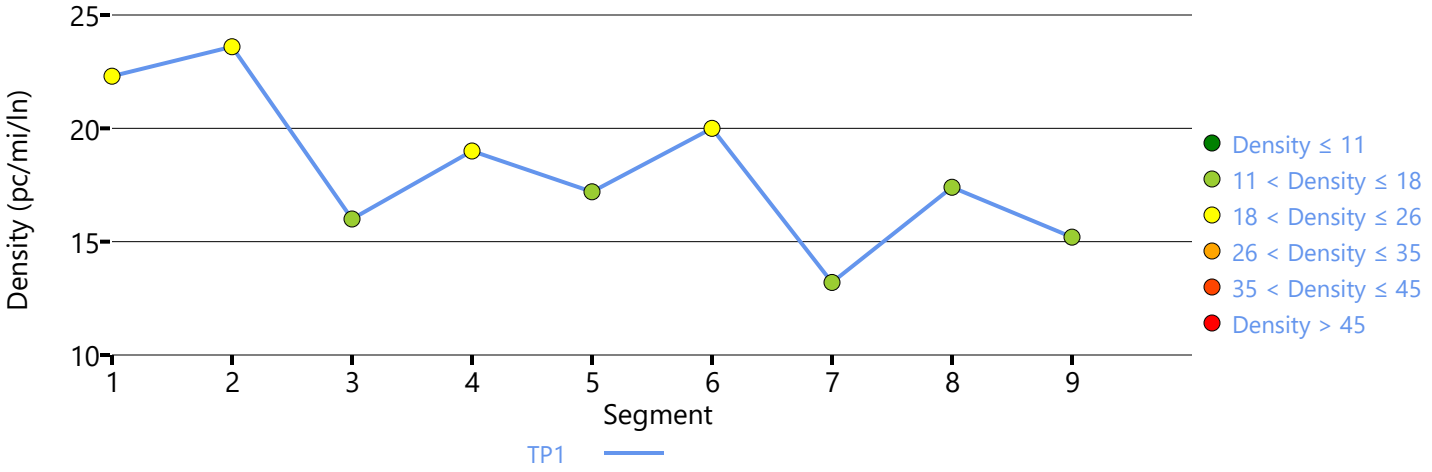
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	10/1/10
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	NB - AM Peak Hour - Alternative 2.2
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	9
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start NB	300	2
2	Diverge	Diverge	SH 74 (South) Off	1500	2
3	Basic	Basic	SH 74 (South) Off to SH 74 (South) On	2410	2
4	Merge	Merge	SH 74 (South) On	1500	2
5	Basic	Basic	SH 74 (South) On to Grant St Off	11905	2
6	Diverge	Diverge	Grant St Off	1500	2
7	Basic	Basic	Grant St Off to N Green Ave (SH 74) On	8040	2
8	Merge	Merge	N Green Ave (SH 74) On	1500	2
9	Basic	Basic	Study Limit - End NB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.741	2377	4646	0.51	72.3	16.4	B

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.741	0.901	2377	242	4646	2033	0.51	0.12	62.4	62.4	19.0	22.4	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.741	2083	4646	0.45	72.2	14.4	B

Segment 4: Merge

Time	PHF	fHV	Flow Rate	Capacity	d/c	Speed	Density	LOS

Period					(pc/h)		(pc/h)		Ratio		(mi/h)		(pc/mi/ln)		
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.741	0.885	2565	482	4646	2033	0.55	0.24	62.3	62.3	20.6	23.0	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.741	2658	4646	0.57	71.5	18.6	C

Segment 6: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.94	0.741	0.962	2658	48	4646	1936	0.57	0.02	59.0	59.0	22.5	24.4	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	2483	4646	0.53	72.0	17.2	B

Segment 8: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.962	3130	647	4646	2130	0.67	0.30	60.8	60.8	25.7	28.3	D

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	3286	4646	0.71	67.9	24.2	C

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	69.1	18.6	14.0	4.80	C

Facility Overall Results

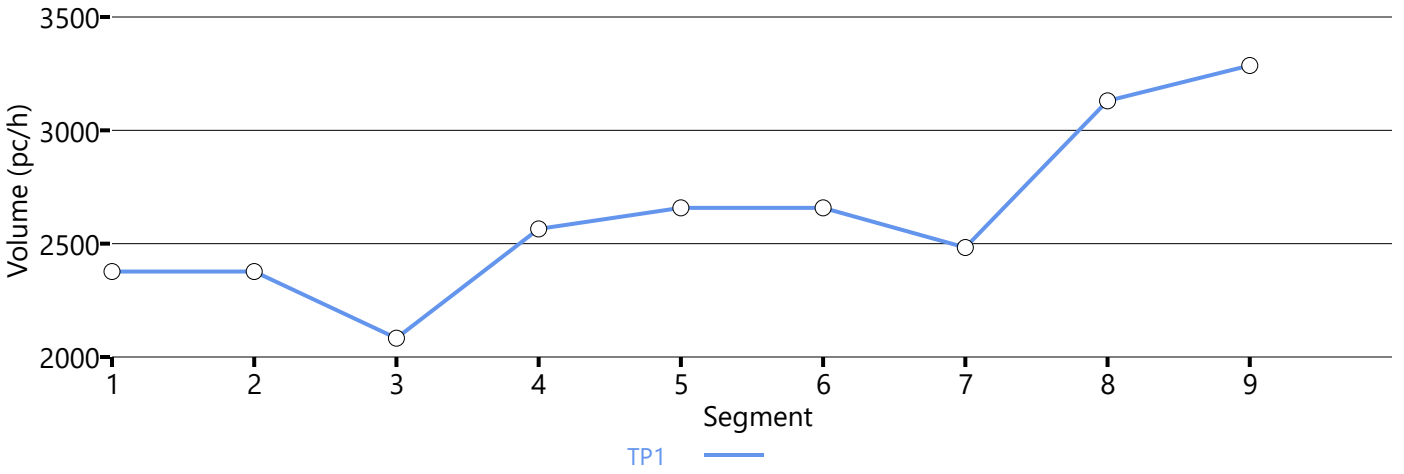
Space Mean Speed, mi/h	69.1	Density, veh/mi/ln	14.0
Average Travel Time, min	4.80	Density, pc/mi/ln	18.6

Messages

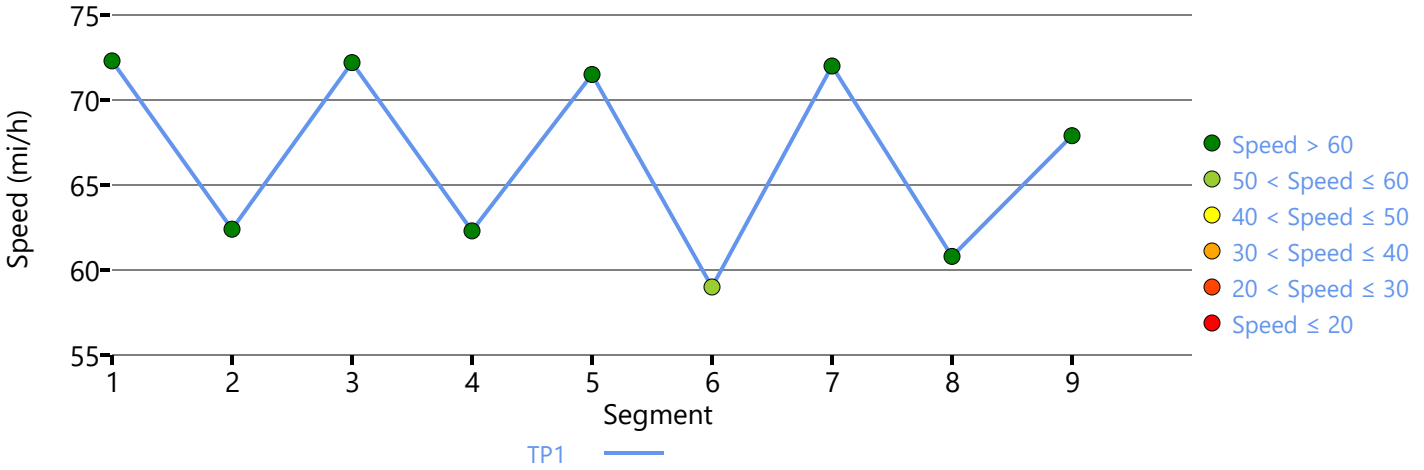
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

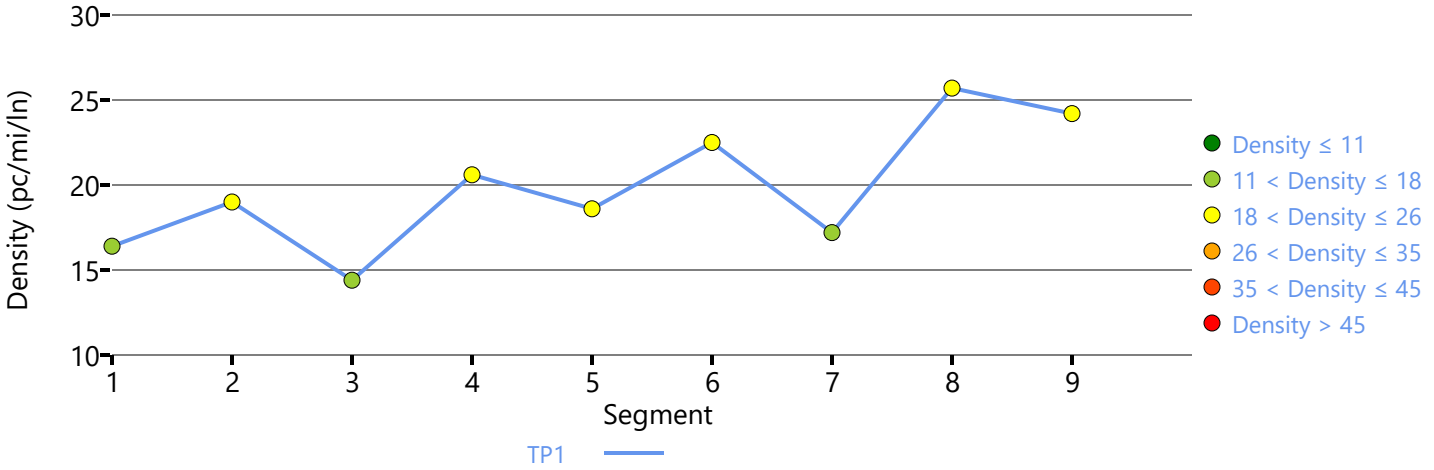
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	10/1/10
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	NB - PM Peak Hour - Alternative 2.2
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	9
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start NB	300	2
2	Diverge	Diverge	SH 74 (South) Off	1500	2
3	Basic	Basic	SH 74 (South) Off to SH 74 (South) On	2410	2
4	Merge	Merge	SH 74 (South) On	1500	2
5	Basic	Basic	SH 74 (South) On to Grant St Off	11905	2
6	Diverge	Diverge	Grant St Off	1500	2
7	Basic	Basic	Grant St Off to N Green Ave (SH 74) On	8040	2
8	Merge	Merge	N Green Ave (SH 74) On	1500	2
9	Basic	Basic	Study Limit - End NB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	2831	4646	0.61	70.7	20.0	C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.909	2831	200	4646	2033	0.61	0.10	62.5	62.5	22.6	26.3	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	2596	4646	0.56	71.7	18.1	C

Segment 4: Merge

Time	PHF	fHV	Flow Rate	Capacity	d/c	Speed	Density	LOS

Period					(pc/h)		(pc/h)		Ratio		(mi/h)		(pc/mi/ln)		
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.96	0.95	0.746	0.909	3059	391	4646	2033	0.66	0.19	61.2	61.2	25.0	26.8	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	3055	4646	0.66	69.5	22.0	C

Segment 6: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.943	3055	37	4646	1936	0.66	0.02	59.0	59.0	25.9	27.8	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.781	2987	4646	0.64	69.9	21.4	C

Segment 8: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.781	0.909	3656	669	4646	1936	0.79	0.35	58.6	58.6	31.2	32.4	D

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.781	3766	4646	0.81	63.5	29.7	D

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	67.4	22.4	17.4	4.90	D

Facility Overall Results

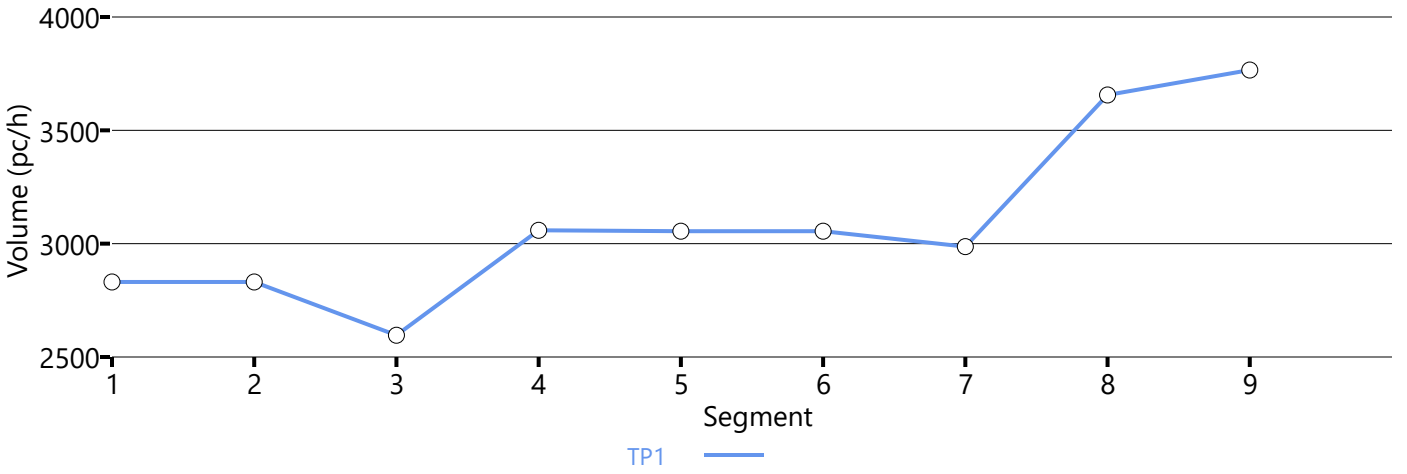
Space Mean Speed, mi/h	67.4	Density, veh/mi/ln	17.4
Average Travel Time, min	4.90	Density, pc/mi/ln	22.4

Messages

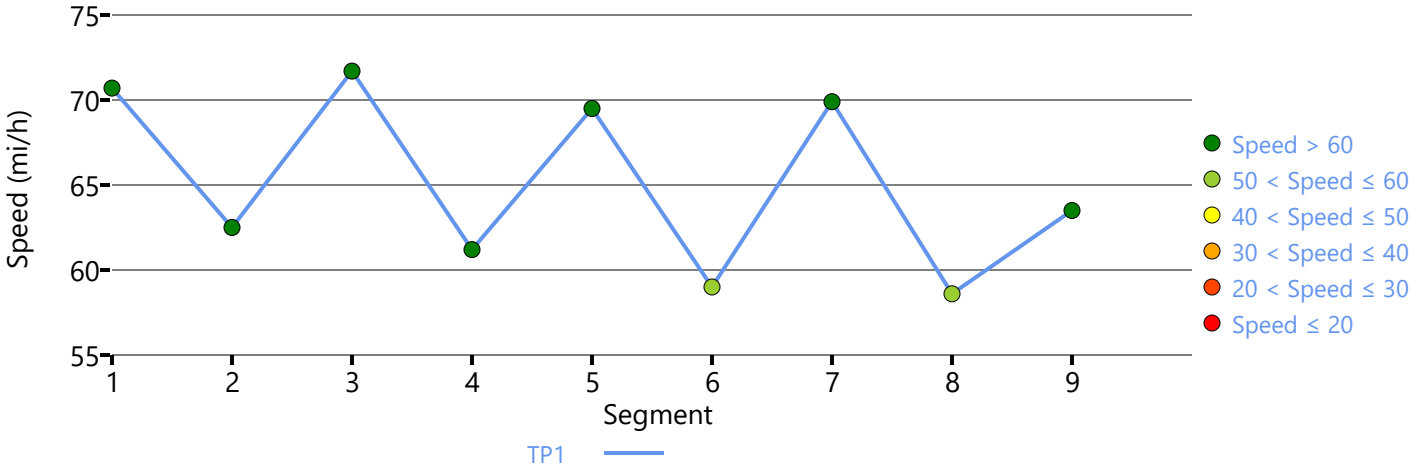
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

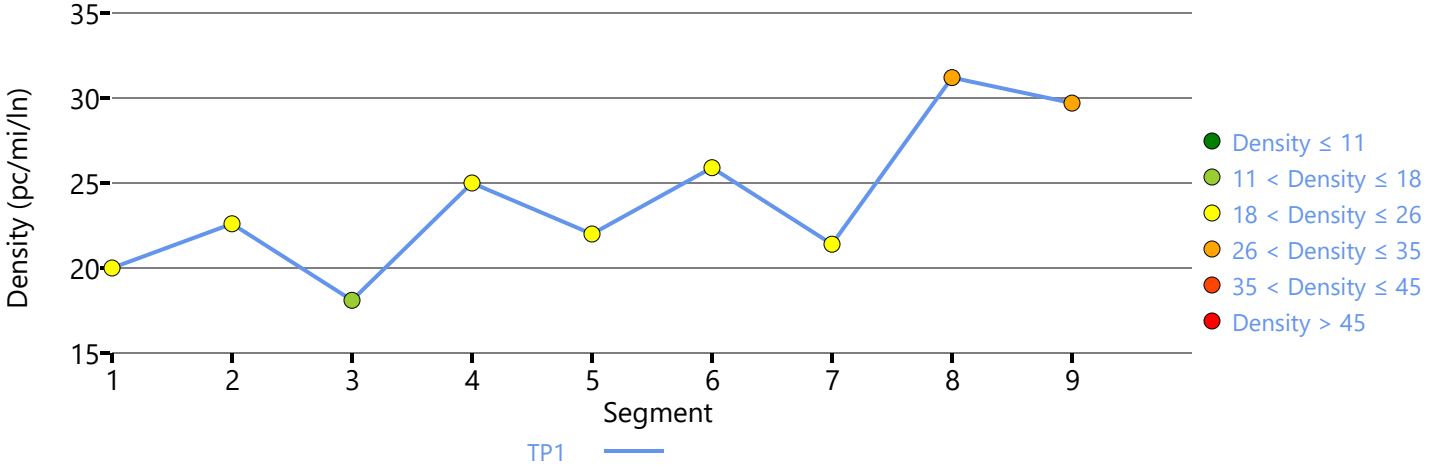
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	10/1/20
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	SB - AM Peak Hour - Alternative 2.1
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	9
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start SB	300	2
2	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
3	Basic	Basic	N Green Ave (SH 74) Off to Grant St On	7600	2
4	Merge	Merge	Grant St On	1500	2
5	Basic	Basic	Grant St On to SH 74 (South) Off	12330	2
6	Diverge	Diverge	SH 74(South) Off	1500	2
7	Basic	Basic	SH 74(South) Off to SH 74(South) On	2380	2
8	Merge	Merge	SH 74(South) On	1500	2
9	Basic	Basic	Study Limit - End SB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.769	3830	4646	0.82	63.0	30.4	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.769	0.935	3830	664	4646	2130	0.82	0.31	65.9	65.9	29.1	33.6	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.769	3022	4646	0.65	70.3	21.5	C

Segment 4: Merge

Time	PHF	fHV	Flow Rate	Capacity	d/c	Speed	Density	LOS

Period					(pc/h)		(pc/h)		Ratio		(mi/h)		(pc/mi/ln)		
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.769	0.943	3061	39	4646	1936	0.66	0.02	61.5	61.5	24.9	27.5	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.725	3257	4646	0.70	68.6	23.7	C

Segment 6: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.725	0.862	3257	416	4646	2033	0.70	0.20	62.6	62.6	26.0	29.6	D

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.725	2762	4646	0.59	71.8	19.2	C

Segment 8: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.725	0.862	2972	210	4646	2033	0.64	0.10	62.1	62.1	23.9	26.4	C

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.725	3011	4646	0.65	70.4	21.4	C

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	67.9	23.3	17.3	4.80	D

Facility Overall Results

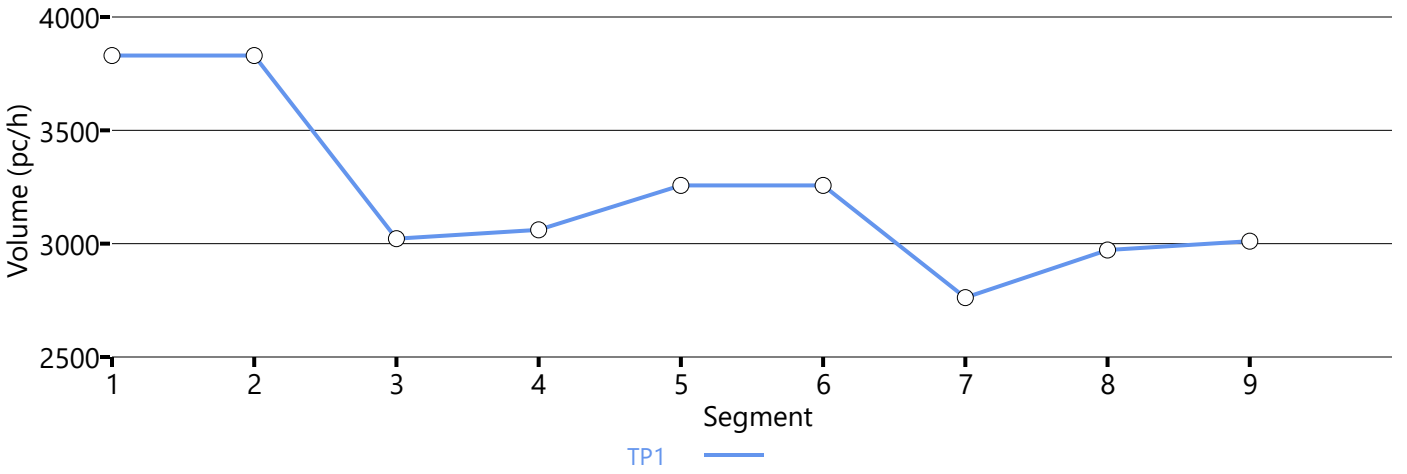
Space Mean Speed, mi/h	67.9	Density, veh/mi/ln	17.3
Average Travel Time, min	4.80	Density, pc/mi/ln	23.3

Messages

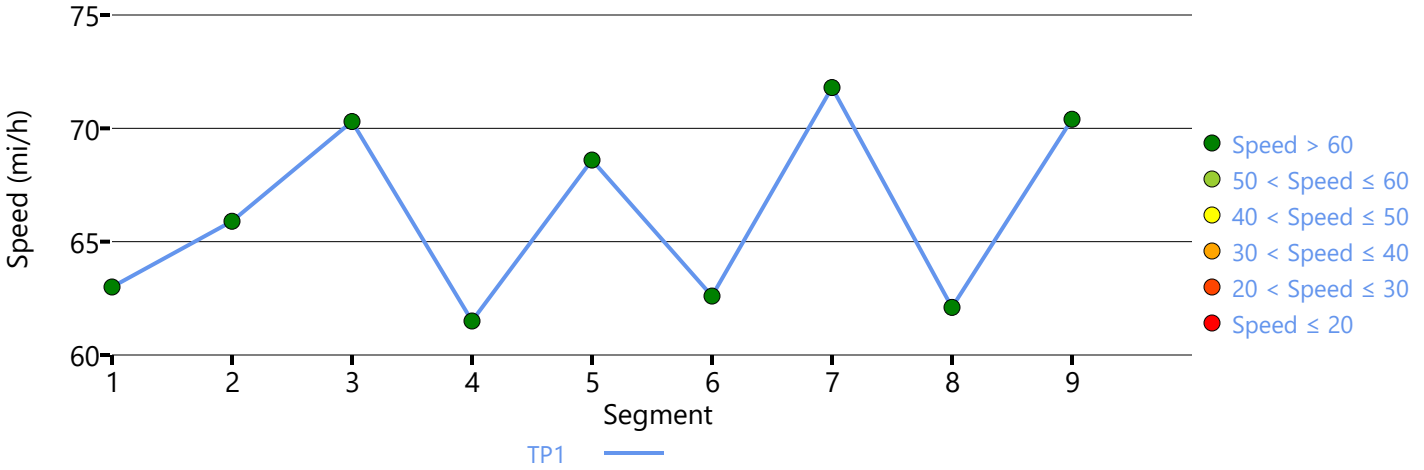
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

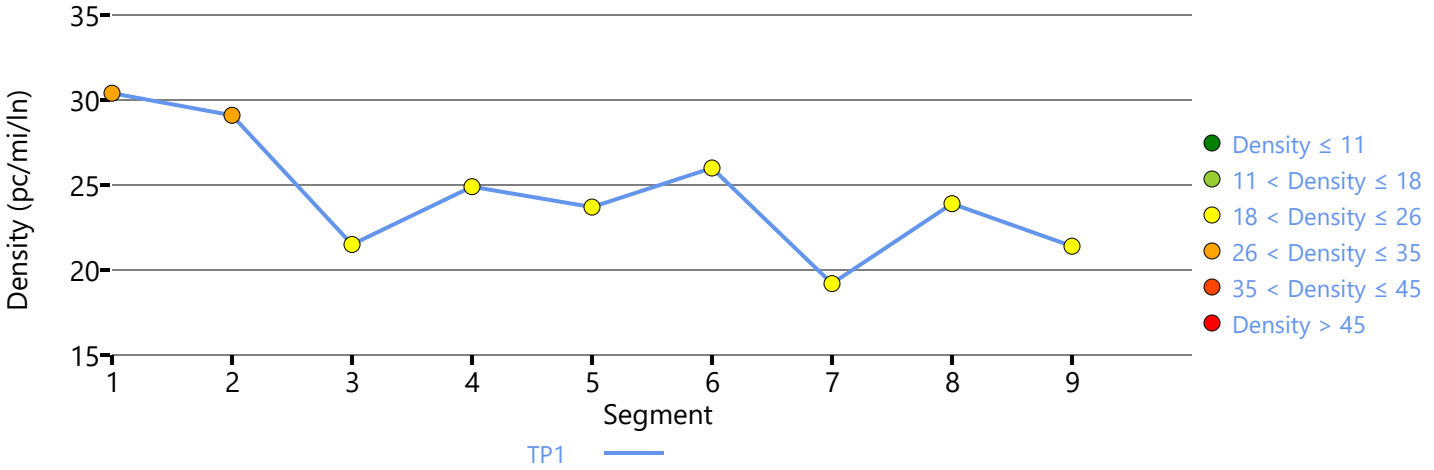
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	10/1/20
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	SB - PM Peak Hour - Alternative 2.2
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	9
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start SB	300	2
2	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
3	Basic	Basic	N Green Ave (SH 74) Off to Grant St On	7600	2
4	Merge	Merge	Grant St On	1500	2
5	Basic	Basic	Grant St On to SH 74 (South) Off	12330	2
6	Diverge	Diverge	SH 74(South) Off	1500	2
7	Basic	Basic	SH 74(South) Off to SH 74(South) On	2380	2
8	Merge	Merge	SH 74(South) On	1500	2
9	Basic	Basic	Study Limit - End SB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.820	3105	4646	0.67	69.7	22.3	C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.820	0.952	3105	656	4646	2130	0.67	0.31	65.9	65.9	23.6	27.4	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.820	2344	4646	0.50	73.3	16.0	B

Segment 4: Merge

Time	PHF	fHV	Flow Rate	Capacity	d/c	Speed	Density	LOS

Period					(pc/h)		(pc/h)		Ratio		(mi/h)		(pc/mi/ln)		
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.820	0.962	2390	46	4646	1936	0.51	0.02	62.8	62.8	19.0	22.3	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.787	2498	4646	0.54	72.8	17.2	B

Segment 6: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.787	0.935	2498	463	4646	2033	0.54	0.23	62.5	62.5	20.0	23.0	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.787	1949	4646	0.42	73.2	13.2	B

Segment 8: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.787	0.862	2204	255	4646	2033	0.47	0.13	63.4	63.4	17.4	20.4	C

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.787	2228	4646	0.48	71.3	15.2	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	70.7	17.2	13.7	4.60	C

Facility Overall Results

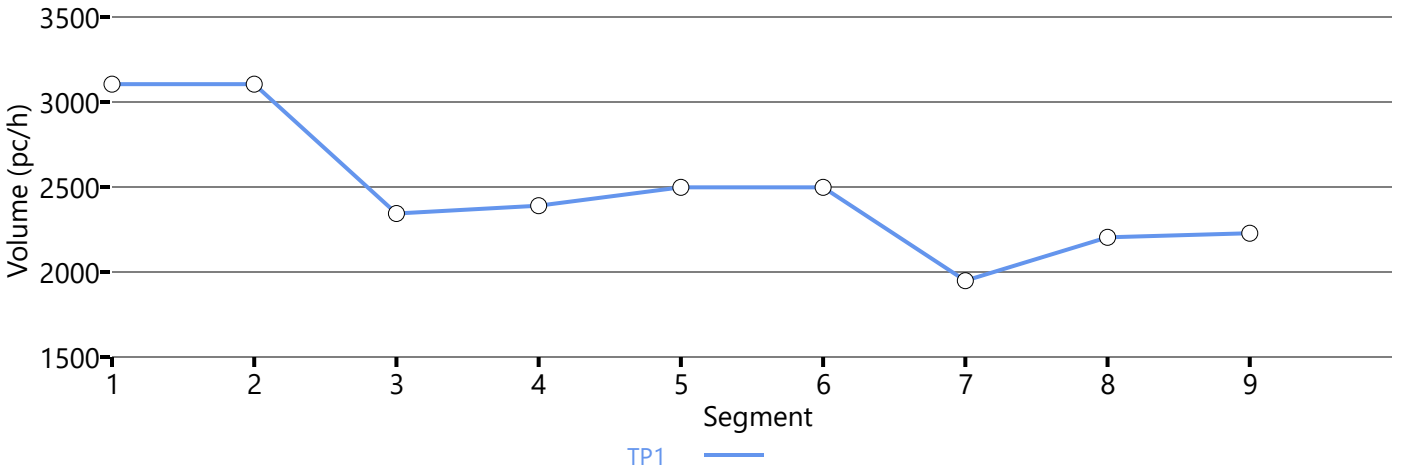
Space Mean Speed, mi/h	70.7	Density, veh/mi/ln	13.7
Average Travel Time, min	4.60	Density, pc/mi/ln	17.2

Messages

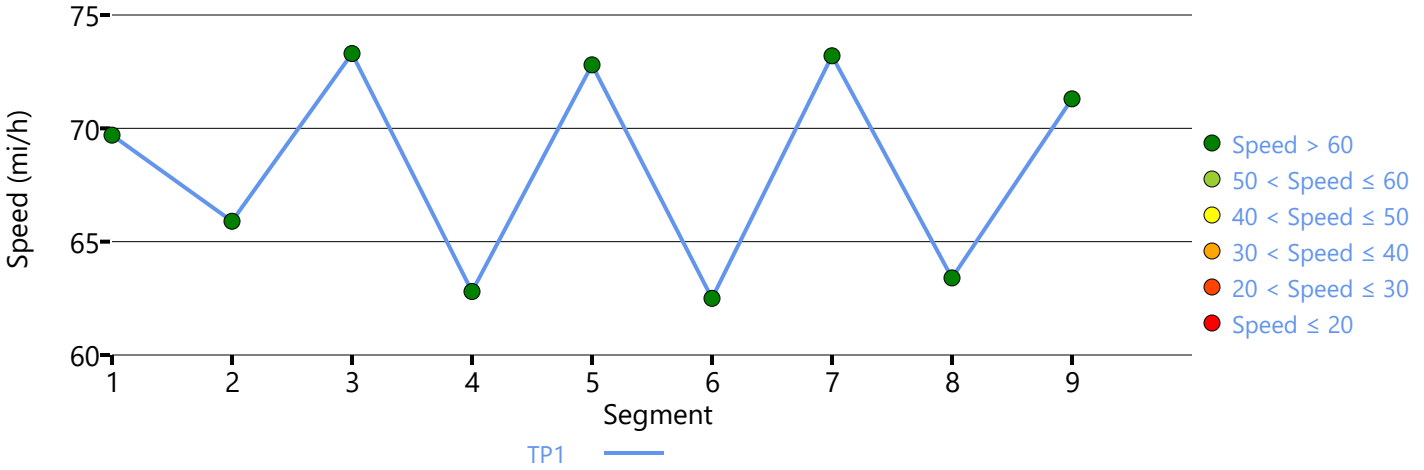
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

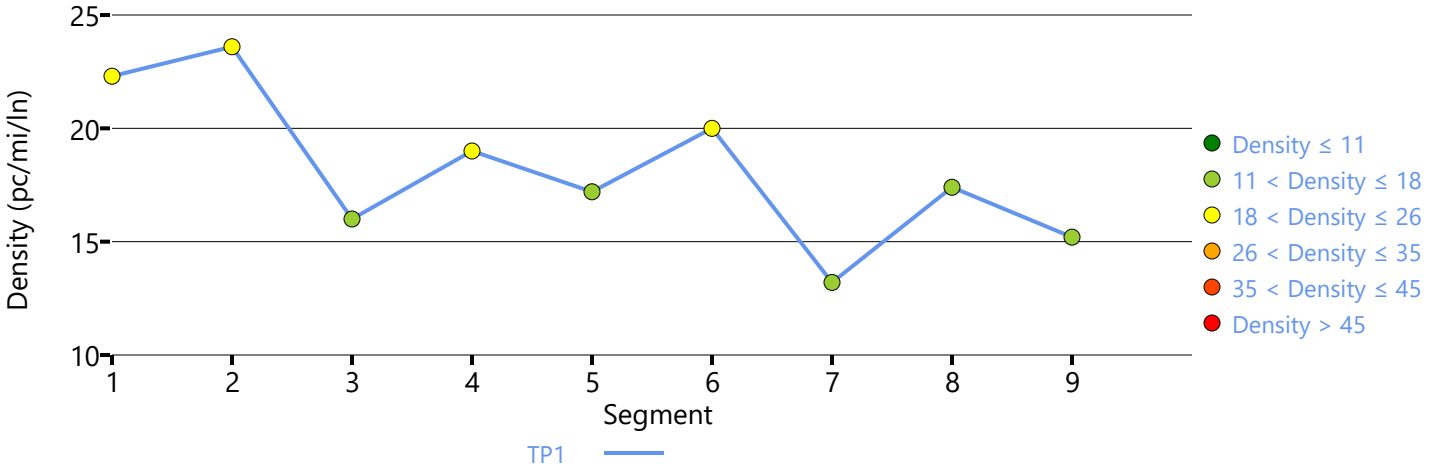
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	10/2/10
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	NB - AM Peak Hour - Alternative 3.1
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	13
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start NB	300	2
2	Diverge	Diverge	SH 74 (South) Off	1500	2
3	Basic	Basic	SH 74 (South) Off to SH 74 (South) On	2410	2
4	Merge	Merge	SH 74 (South) On	1500	2
5	Basic	Basic	SH 74 (South) On to Grant St Off	11905	2
6	Diverge	Diverge	Grant St Off	1500	2
7	Basic	Basic	Grant St Off to Grant St On	2000	2
8	Merge	Merge	Grant St On	1500	2
9	Basic	Basic	Grant St On to N Green Ave (SH 74) Off	300	2
10	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
11	Basic	Basic	N Green Ave (SH 74) Off to N Green Ave (SH 74) On	2740	2
12	Merge	Merge	N Green Ave (SH 74) On	1500	2
13	Basic	Basic	Study Limit - End NB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.741	2377	4646	0.51	72.3	16.4	B

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.741	0.901	2377	242	4646	2033	0.51	0.12	62.4	62.4	19.0	22.4	C

Segment 3: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	0.95		0.741		2083		4646		0.45		72.2		14.4		B
Segment 4: Merge															
Time Period	**PHF**		**fHV**		**Flow Rate (pc/h)**		**Capacity (pc/h)**		**d/c Ratio**		**Speed (mi/h)**		**Density (pc/mi/ln)**		**LOS**
	F	**R**	**F**	**R**	**Freeway**	**Ramp**	**Freeway**	**Ramp**	**F**	**R**	**F**	**R**	**Freeway**	**Ramp**	
1	0.95	0.95	0.741	0.885	2565	482	4646	2033	0.55	0.24	62.3	62.3	20.6	23.0	C
Segment 5: Basic															
Time Period	**PHF**		**fHV**		**Flow Rate (pc/h)**		**Capacity (pc/h)**		**d/c Ratio**		**Speed (mi/h)**		**Density (pc/mi/ln)**		**LOS**
1	0.95		0.741		2658		4646		0.57		71.5		18.6		C
Segment 6: Diverge															
Time Period	**PHF**		**fHV**		**Flow Rate (pc/h)**		**Capacity (pc/h)**		**d/c Ratio**		**Speed (mi/h)**		**Density (pc/mi/ln)**		**LOS**
	F	**R**	**F**	**R**	**Freeway**	**Ramp**	**Freeway**	**Ramp**	**F**	**R**	**F**	**R**	**Freeway**	**Ramp**	
1	0.95	0.95	0.741	0.962	2658	37	4646	1936	0.57	0.02	59.0	59.0	22.5	24.4	C
Segment 7: Basic															
Time Period	**PHF**		**fHV**		**Flow Rate (pc/h)**		**Capacity (pc/h)**		**d/c Ratio**		**Speed (mi/h)**		**Density (pc/mi/ln)**		**LOS**
1	0.95		0.775		2495		4646		0.54		71.8		17.3		B
Segment 8: Merge															
Time Period	**PHF**		**fHV**		**Flow Rate (pc/h)**		**Capacity (pc/h)**		**d/c Ratio**		**Speed (mi/h)**		**Density (pc/mi/ln)**		**LOS**
	F	**R**	**F**	**R**	**Freeway**	**Ramp**	**Freeway**	**Ramp**	**F**	**R**	**F**	**R**	**Freeway**	**Ramp**	
1	0.95	0.95	0.775	0.962	2586	91	4646	1936	0.56	0.05	61.8	61.8	20.9	23.8	C
Segment 9: Basic															
Time Period	**PHF**		**fHV**		**Flow Rate (pc/h)**		**Capacity (pc/h)**		**d/c Ratio**		**Speed (mi/h)**		**Density (pc/mi/ln)**		**LOS**
1	0.95		0.775		2608		4646		0.56		70.1		18.2		C
Segment 10: Diverge															
Time Period	**PHF**		**fHV**		**Flow Rate (pc/h)**		**Capacity (pc/h)**		**d/c Ratio**		**Speed (mi/h)**		**Density (pc/mi/ln)**		**LOS**
	F	**R**	**F**	**R**	**Freeway**	**Ramp**	**Freeway**	**Ramp**	**F**	**R**	**F**	**R**	**Freeway**	**Ramp**	
1	0.95	0.95	0.775	0.962	2608	10	4646	1936	0.56	0.01	59.1	59.1	22.1	23.8	C
Segment 11: Basic															
Time Period	**PHF**		**fHV**		**Flow Rate (pc/h)**		**Capacity (pc/h)**		**d/c Ratio**		**Speed (mi/h)**		**Density (pc/mi/ln)**		**LOS**
1	0.95		0.775		2596		4646		0.56		71.7		18.1		C
Segment 12: Merge															
Time Period	**PHF**		**fHV**		**Flow Rate (pc/h)**		**Capacity (pc/h)**		**d/c Ratio**		**Speed (mi/h)**		**Density (pc/mi/ln)**		**LOS**
	F	**R**	**F**	**R**	**Freeway**	**Ramp**	**Freeway**	**Ramp**	**F**	**R**	**F**	**R**	**Freeway**	**Ramp**	
1	0.95	0.95	0.775	0.962	3152	556	4646	2130	0.68	0.26	60.7	60.7	26.0	28.5	D

Segment 13: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	3286	4646	0.71	67.9	24.2	C

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	67.7	19.2	14.4	4.90	C

Facility Overall Results

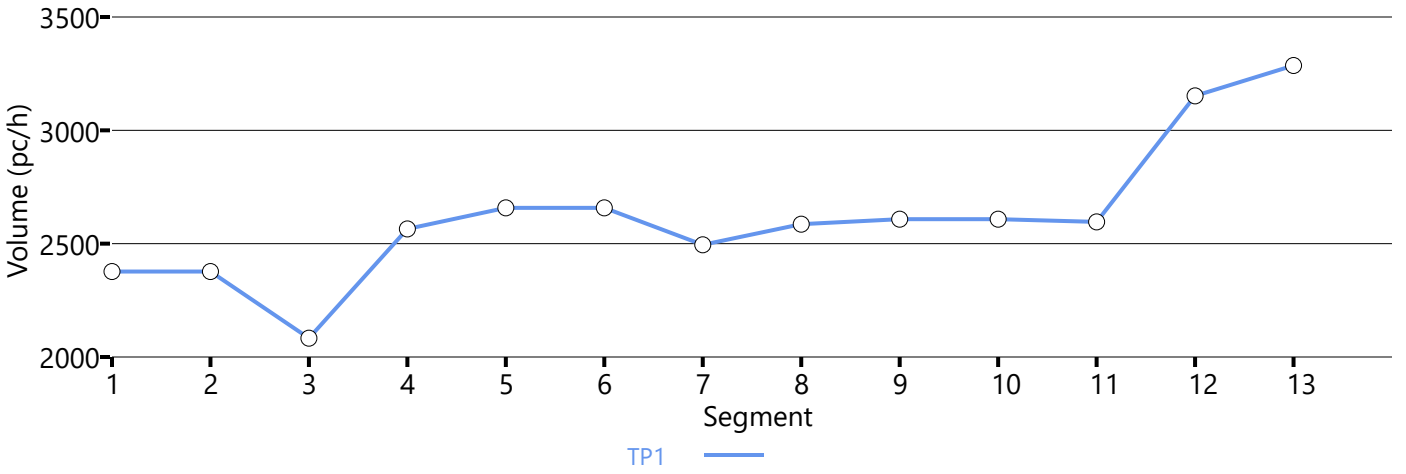
Space Mean Speed, mi/h	67.7	Density, veh/mi/ln	14.4
Average Travel Time, min	4.90	Density, pc/mi/ln	19.2

Messages

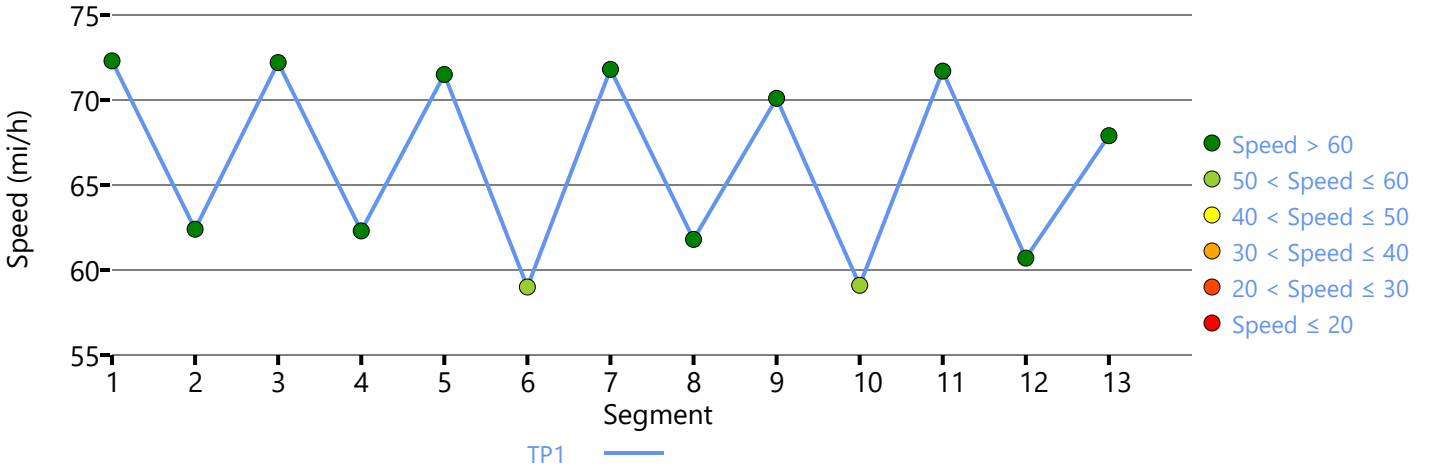
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

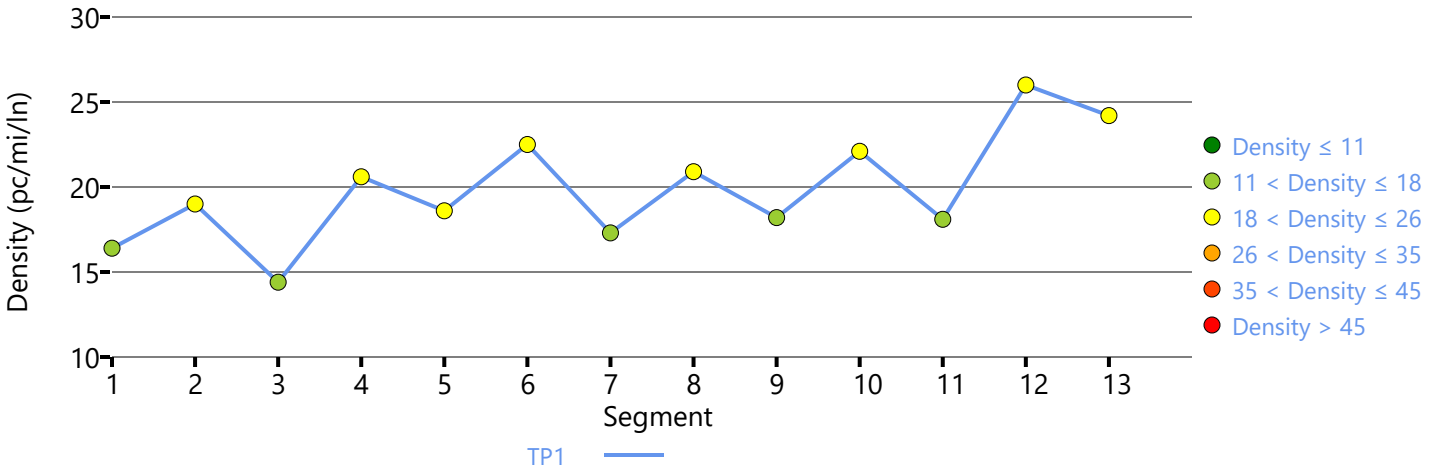
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	10/2/10
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	NB - PM Peak Hour - Alternative 3.1
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	13
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start NB	300	2
2	Diverge	Diverge	SH 74 (South) Off	1500	2
3	Basic	Basic	SH 74 (South) Off to SH 74 (South) On	2410	2
4	Merge	Merge	SH 74 (South) On	1500	2
5	Basic	Basic	SH 74 (South) On to Grant St Off	11905	2
6	Diverge	Diverge	Grant St Off	1500	2
7	Basic	Basic	Grant St Off to Grant On	2000	2
8	Merge	Merge	Grant On	1500	2
9	Basic	Basic	Grant On to N Green Ave (SH 74) Off	300	2
10	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
11	Basic	Basic	N Green Ave (SH 74) Off to N Green Ave (SH 74) On	2740	2
12	Merge	Merge	N Green Ave (SH 74) On	1500	2
13	Basic	Basic	Study Limit - End NB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	2831	4646	0.61	70.7	20.0	C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.909	2831	200	4646	2033	0.61	0.10	62.5	62.5	22.6	26.3	C

Segment 3: Basic

Time	PHF	fHV	Flow Rate	Capacity	d/c	Speed	Density	LOS

Period			(pc/h)		(pc/h)		Ratio		(mi/h)		(pc/mi/ln)		
1	0.95		0.775		2596		4646		0.56		71.7		18.1	C

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.909	2987	391	4646	2033	0.64	0.19	61.4	61.4	24.3	26.3	C

Segment 5: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	0.95		0.775		3055		4646		0.66		69.5		22.0		C

Segment 6: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.943	3055	29	4646	1936	0.66	0.01	59.1	59.1	25.8	27.8	C

Segment 7: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	0.95		0.781		2996		4646		0.64		69.8		21.5		C

Segment 8: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.781	0.909	3090	94	4646	1936	0.67	0.05	60.8	60.8	25.4	27.7	C

Segment 9: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	0.95		0.781		3105		4646		0.67		69.2		22.4		C

Segment 10: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.781	0.943	3105	8	4646	1936	0.67	0.00	59.1	59.1	26.3	28.1	D

Segment 11: Basic

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
1	0.95		0.781		3096		4646		0.67		69.2		22.4		C

Segment 12: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.781	0.909	3672	576	4646	2130	0.79	0.27	58.8	58.8	31.2	32.5	D

Segment 13: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.781	3766	4646	0.81	63.5	29.7	D

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	66.3	23.0	17.8	5.00	D

Facility Overall Results

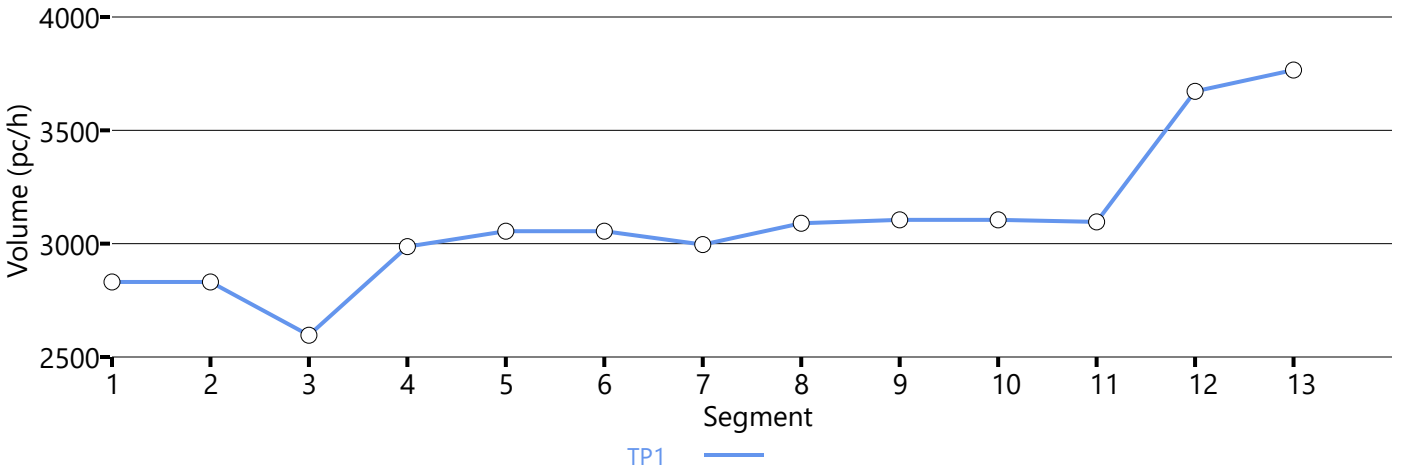
Space Mean Speed, mi/h	66.3	Density, veh/mi/ln	17.8
Average Travel Time, min	5.00	Density, pc/mi/ln	23.0

Messages

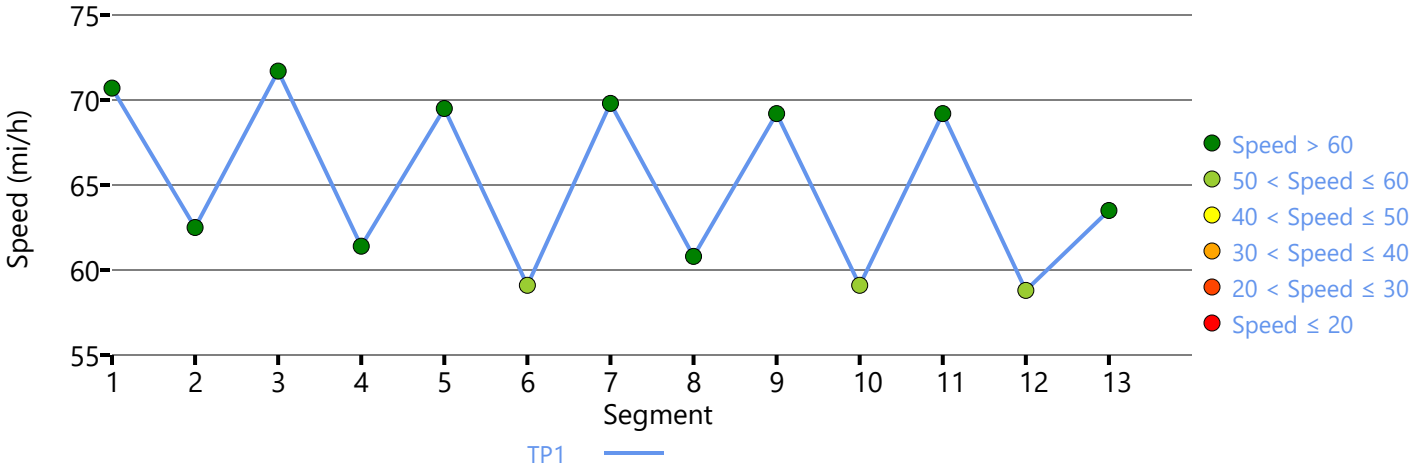
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

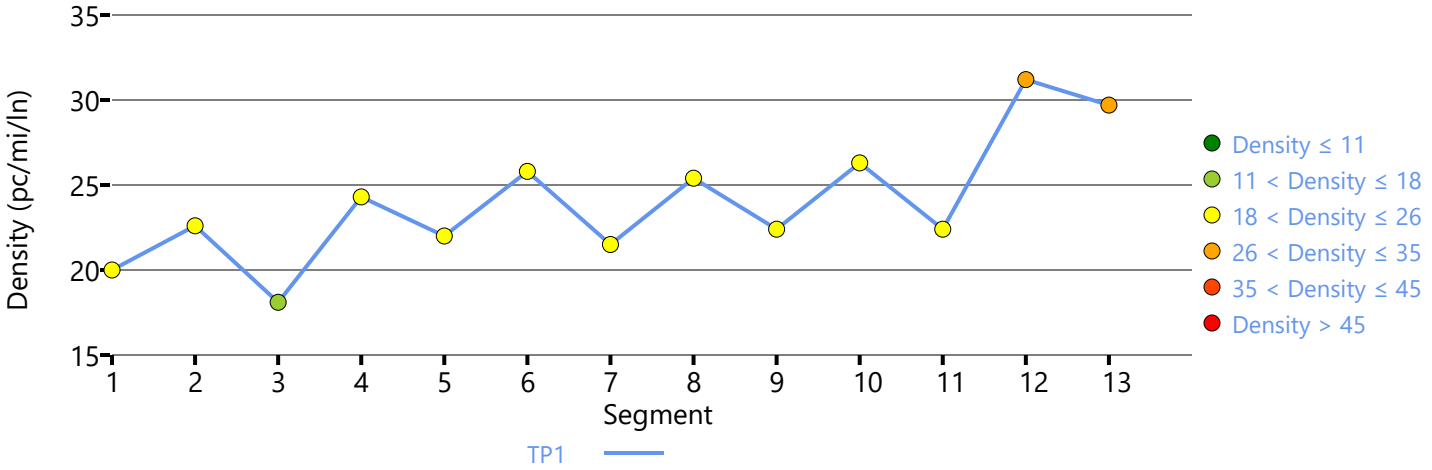
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	10/1/20
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	SB - AM Peak Hour - Alternative 3.1
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	11
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start SB	300	2
2	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
3	Basic	Basic	N Green Ave (SH 74) Off to Grant Off	4100	2
4	Diverge	Diverge	Grant St Off	1500	2
5	Basic	Basic	Grant St Off to Grant St On	2000	2
6	Merge	Merge	Grant St On	1500	2
7	Basic	Basic	Grant St On to SH 74 (South) Off	12330	2
8	Diverge	Diverge	SH 74 (South) Off	1500	2
9	Basic	Basic	SH 74 (South) Off to SH 74 (South) On	2380	2
10	Merge	Merge	SH 74 (South) On	1500	2
11	Basic	Basic	Study Limit - End SB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.769	3830	4646	0.82	63.0	30.4	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.769	0.935	3830	571	4646	2130	0.82	0.27	66.2	66.2	28.9	33.6	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.769	3136	4646	0.67	69.5	22.6	C

Segment 4: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.769	0.935	3136	93	4646	1936	0.67	0.05	59.5	59.5	26.4	28.5	D

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.769	3022	4646	0.65	70.3	21.5	C

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.769	0.943	3061	39	4646	1936	0.66	0.02	61.5	61.5	24.9	27.5	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.725	3257	4646	0.70	68.6	23.7	C

Segment 8: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.725	0.862	3257	416	4646	2033	0.70	0.20	62.6	62.6	26.0	29.6	D

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.725	2762	4646	0.59	71.8	19.2	C

Segment 10: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.746	0.862	2894	210	4646	2033	0.62	0.10	62.3	62.3	23.2	25.8	C

Segment 11: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.725	3011	4646	0.65	70.4	21.4	C

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	67.2	23.6	17.6	4.90	D

Facility Overall Results

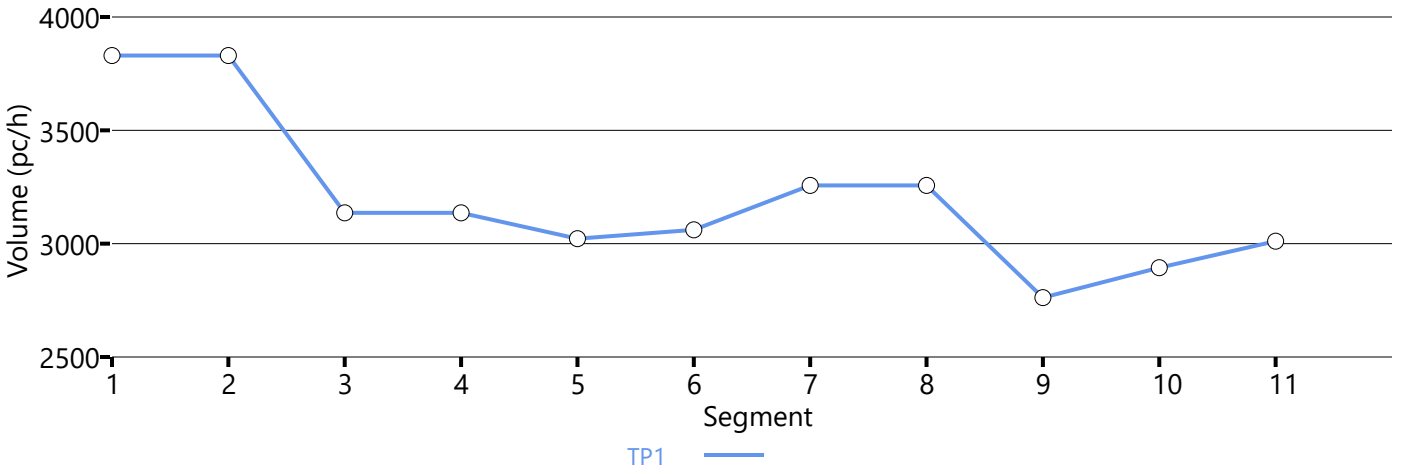
Space Mean Speed, mi/h	67.2	Density, veh/mi/ln	17.6
Average Travel Time, min	4.90	Density, pc/mi/ln	23.6

Messages

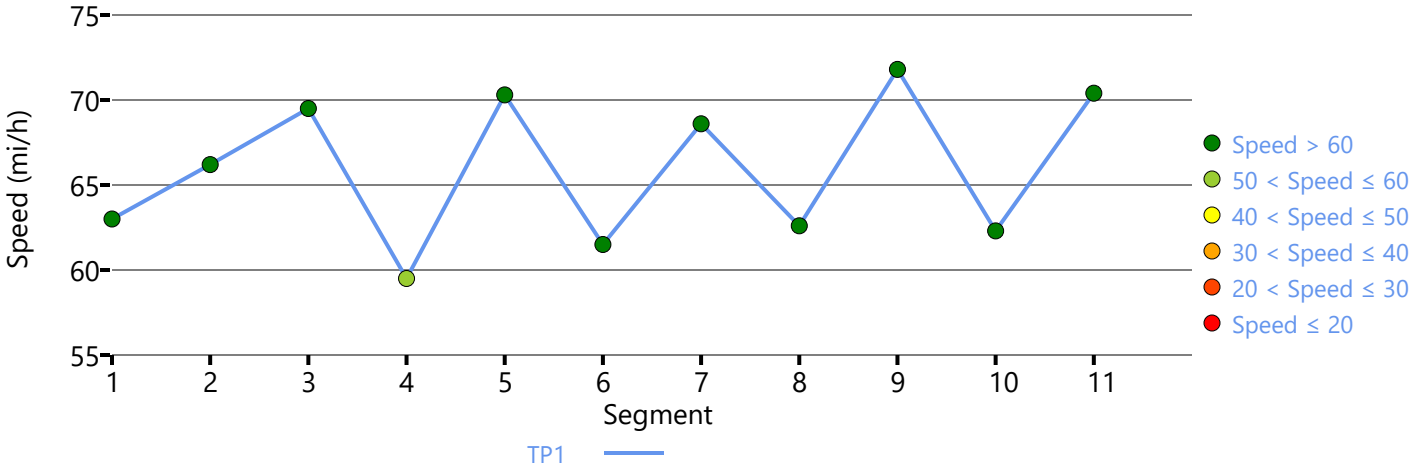
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

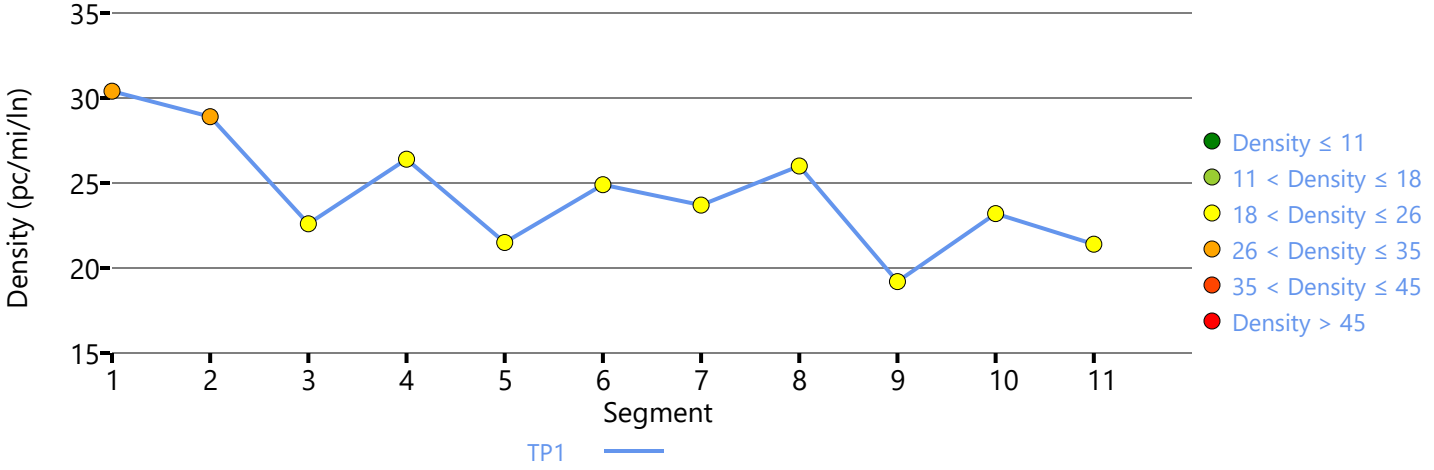
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	10/1/20
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	SB - PM Peak Hour - Alternative 3.1
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	11
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start SB	300	2
2	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
3	Basic	Basic	N Green Ave (SH 74) Off to Grant Off	4100	2
4	Diverge	Diverge	Grant St Off	1500	2
5	Basic	Basic	Grant St Off to Grant St On	2000	2
6	Merge	Merge	Grant St On	1500	2
7	Basic	Basic	Grant St On to SH 74 (South) Off	12330	2
8	Diverge	Diverge	SH 74 (South) Off	1500	2
9	Basic	Basic	SH 74 (South) Off to SH 74 (South) On	2380	2
10	Merge	Merge	SH 74 (South) On	1500	2
11	Basic	Basic	Study Limit - End SB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.820	3105	4646	0.67	69.7	22.3	C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.820	0.952	3105	564	4646	2130	0.67	0.26	66.2	66.2	23.5	27.4	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.820	2451	4646	0.53	73.0	16.8	B

Segment 4: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.820	0.952	2451	92	4646	1936	0.53	0.05	59.5	59.5	20.6	22.6	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.820	2344	4646	0.50	72.9	16.0	B

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.820	0.962	2390	46	4646	1936	0.51	0.02	62.8	62.8	19.0	22.3	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.787	2498	4646	0.54	72.8	17.2	B

Segment 8: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.787	0.935	2498	463	4646	2033	0.54	0.23	62.5	62.5	20.0	23.0	C

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.787	1949	4646	0.42	73.2	13.2	B

Segment 10: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.787	0.862	2204	255	4646	2033	0.47	0.13	63.4	63.4	17.4	20.4	C

Segment 11: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.787	2228	4646	0.48	71.3	15.2	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	69.9	17.5	14.0	4.70	C

Facility Overall Results

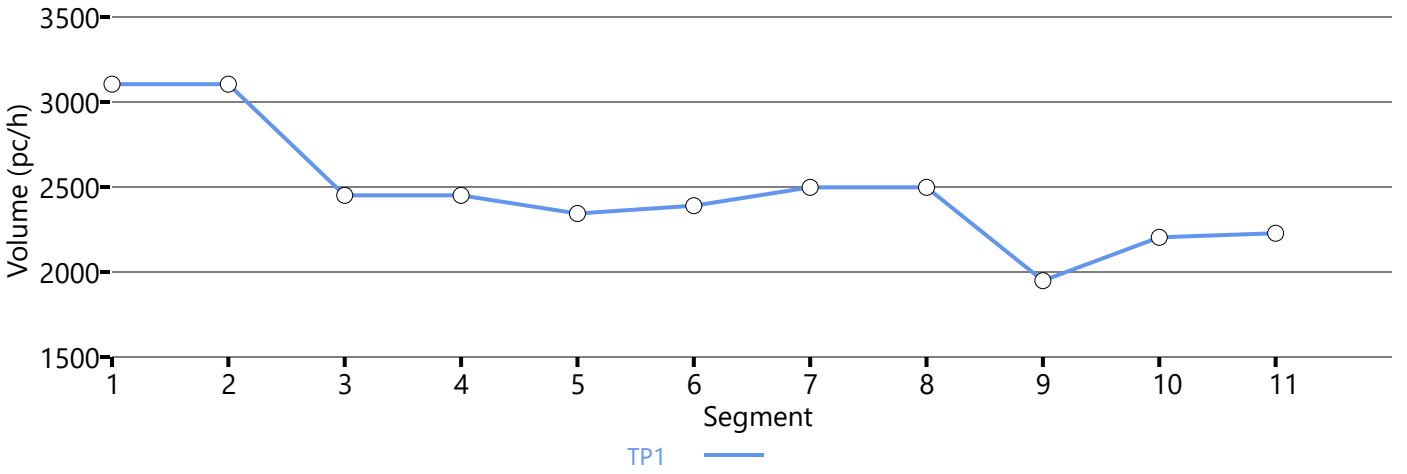
Space Mean Speed, mi/h	69.9	Density, veh/mi/ln	14.0
Average Travel Time, min	4.70	Density, pc/mi/ln	17.5

Messages

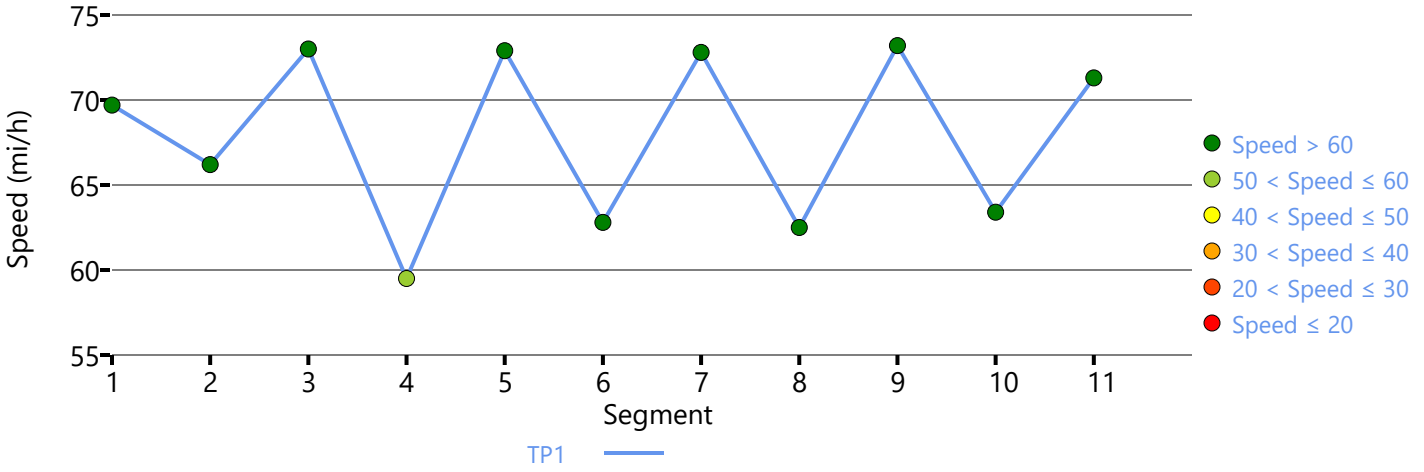
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

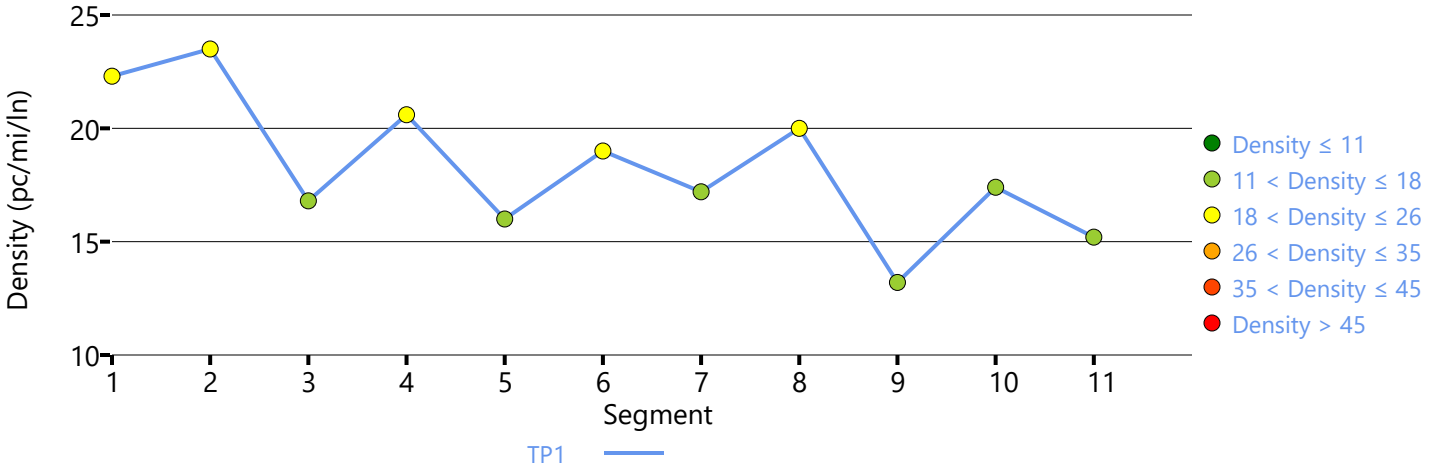
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	10/2/10
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	NB - AM Peak Hour - Alternative 3.2
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	11
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	6.15		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start NB	300	2
2	Diverge	Diverge	SH 74 (South) Off	1500	2
3	Basic	Basic	SH 74 (South) Off to SH 74 (South) On	2410	2
4	Merge	Merge	SH 74 (South) On	1500	2
5	Basic	Basic	SH 74 (South) On to Grant St Off	11905	2
6	Diverge	Diverge	Grant St Off	1500	2
7	Basic	Basic	Grant St Off to Grant St On	2000	2
8	Merge	Merge	Grant St On	1500	2
9	Basic	Basic	Grant St On to N Green Ave (SH 74) On	8040	2
10	Merge	Merge	N Green Ave (SH 74) On	1500	2
11	Basic	Basic	Study Limit - End NB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.741	2377	4646	0.51	72.3	16.4	B

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.741	0.901	2377	242	4646	2033	0.51	0.12	62.4	62.4	19.0	22.4	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.741	2083	4646	0.45	72.2	14.4	B

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.741	0.885	2565	482	4646	2033	0.55	0.24	62.3	62.3	20.6	23.0	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.741	2658	4646	0.57	71.5	18.6	C

Segment 6: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.741	0.962	2658	47	4646	1936	0.57	0.02	59.0	59.0	22.5	24.4	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	2483	4646	0.53	71.8	17.2	B

Segment 8: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.962	2574	91	4646	1936	0.55	0.05	61.8	61.8	20.8	23.7	C

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	2596	4646	0.56	71.7	18.1	C

Segment 10: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.962	3152	556	4646	2130	0.68	0.26	60.7	60.7	26.0	28.5	D

Segment 11: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	3286	4646	0.71	67.9	24.2	C

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	68.8	18.8	14.2	5.40	C

Facility Overall Results

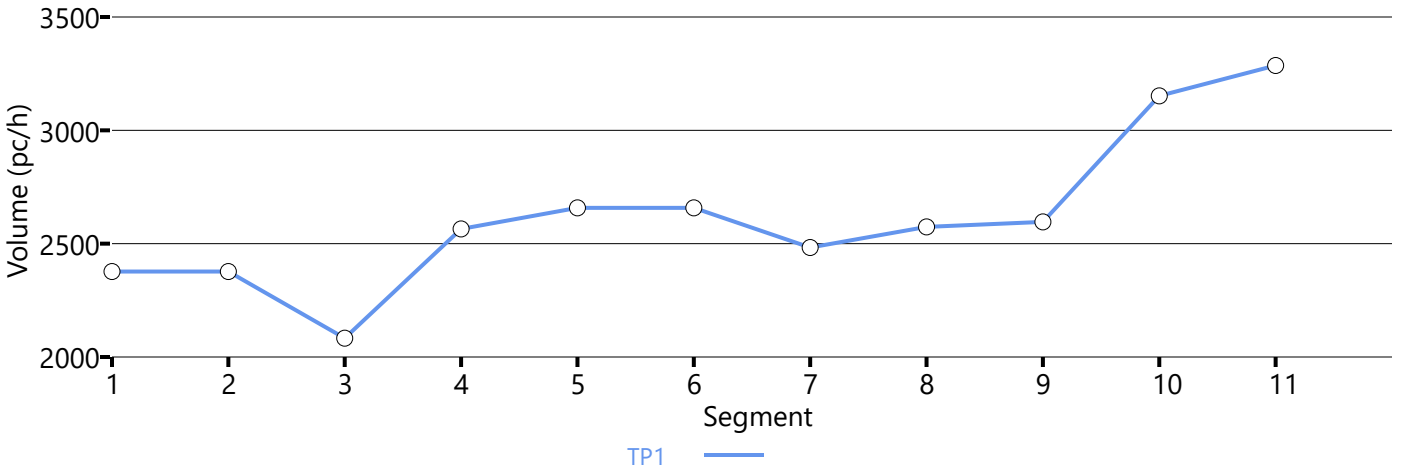
Space Mean Speed, mi/h	68.8	Density, veh/mi/ln	14.2
Average Travel Time, min	5.40	Density, pc/mi/ln	18.8

Messages

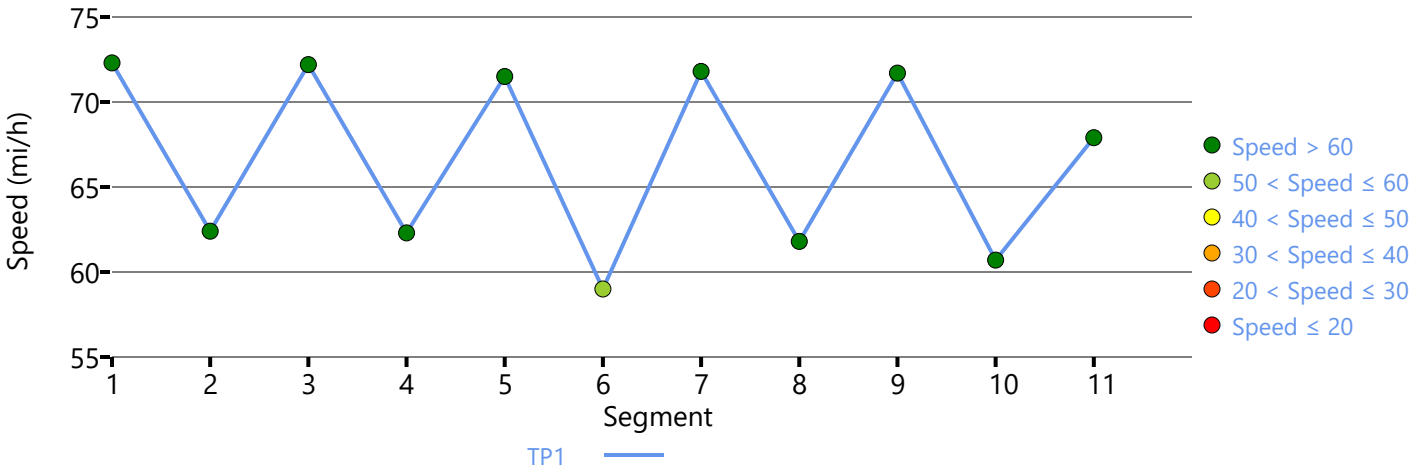
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

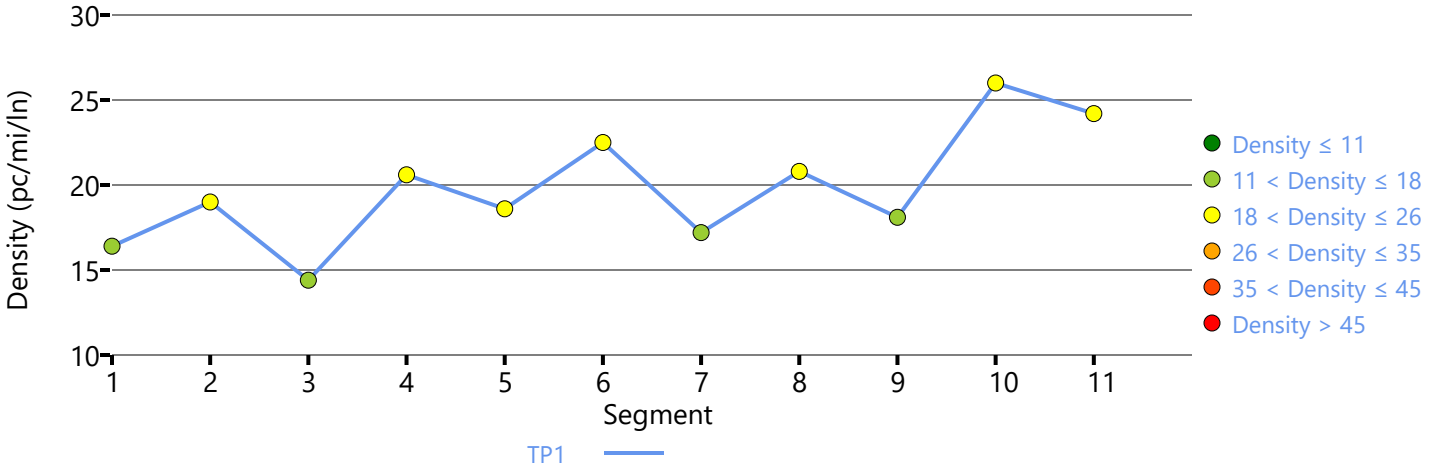
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	10/2/10
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	NB - PM Peak Hour - Alternative 3.2
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	11
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	6.15		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start NB	300	2
2	Diverge	Diverge	SH 74 (South) Off	1500	2
3	Basic	Basic	SH 74 (South) Off to SH 74 (South) On	2410	2
4	Merge	Merge	SH 74 (South) On	1500	2
5	Basic	Basic	SH 74 (South) On to Grant St Off	11905	2
6	Diverge	Diverge	Grant St Off	1500	2
7	Basic	Basic	Grant St Off to Grant St On	2000	2
8	Merge	Merge	Grant St On	1500	2
9	Basic	Basic	Grant St On to N Green Ave (SH 74) On	8040	2
10	Merge	Merge	N Green Ave (SH 74) On	1500	2
11	Basic	Basic	Study Limit - End NB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	2831	4646	0.61	70.7	20.0	C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.909	2831	200	4646	2033	0.61	0.10	62.5	62.5	22.6	26.3	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	2596	4646	0.56	71.7	18.1	C

Segment 4: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.909	2987	391	4646	2033	0.64	0.19	61.4	61.4	24.3	26.3	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.775	3055	4646	0.66	69.5	22.0	C

Segment 6: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.775	0.943	3055	37	4646	1936	0.66	0.02	59.0	59.0	25.9	27.8	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.781	2987	4646	0.64	69.9	21.4	C

Segment 8: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.781	0.909	3081	94	4646	1936	0.66	0.05	60.8	60.8	25.3	27.7	C

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.781	3096	4646	0.67	69.2	22.4	C

Segment 10: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.781	0.909	3672	576	4646	2130	0.79	0.27	58.8	58.8	31.2	32.5	D

Segment 11: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.781	3766	4646	0.81	63.5	29.7	D

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	67.1	22.7	17.7	5.50	D

Facility Overall Results

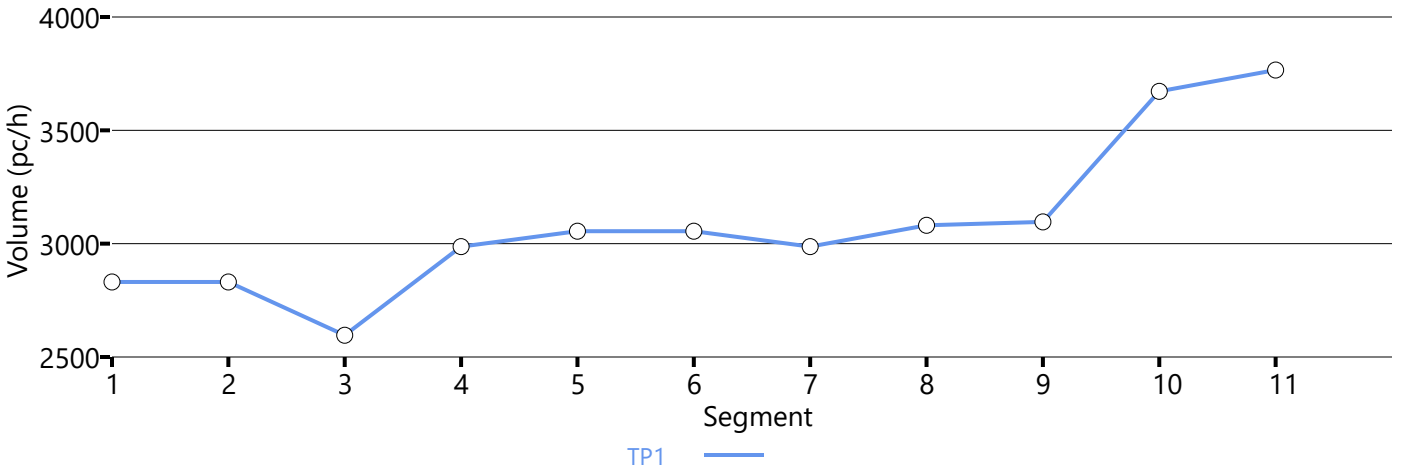
Space Mean Speed, mi/h	67.1	Density, veh/mi/ln	17.7
Average Travel Time, min	5.50	Density, pc/mi/ln	22.7

Messages

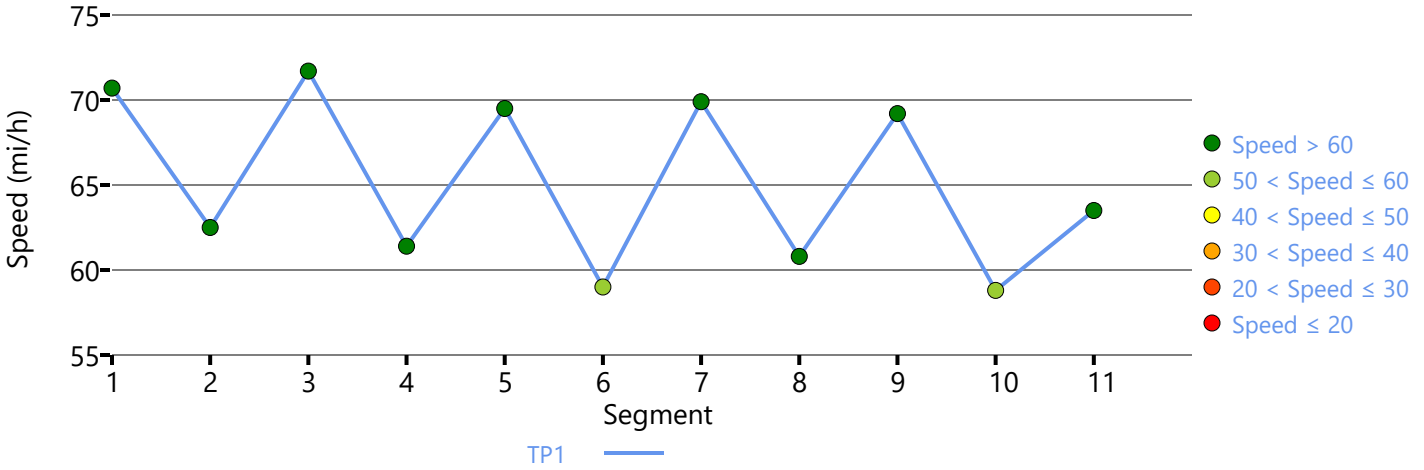
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

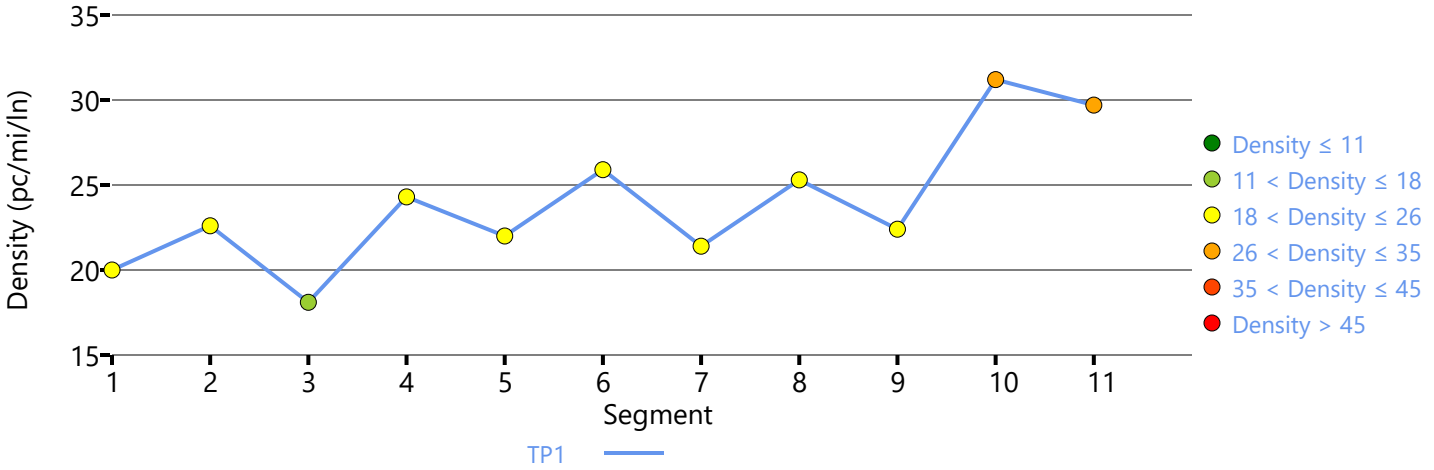
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	10/1/20
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	SB - AM Peak Hour - Alternative 3.1
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	11
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start SB	300	2
2	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
3	Basic	Basic	N Green Ave (SH 74) Off to Grant Off	4100	2
4	Diverge	Diverge	Grant St Off	1500	2
5	Basic	Basic	Grant St Off to Grant St On	2000	2
6	Merge	Merge	Grant St On	1500	2
7	Basic	Basic	Grant St On to SH 74 (South) Off	12330	2
8	Diverge	Diverge	SH 74 (South) Off	1500	2
9	Basic	Basic	SH 74 (South) Off to SH 74 (South) On	2380	2
10	Merge	Merge	SH 74 (South) On	1500	2
11	Basic	Basic	Study Limit - End SB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.769	3830	4646	0.82	63.0	30.4	D

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.769	0.935	3830	571	4646	2130	0.82	0.27	66.2	66.2	28.9	33.6	D

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.769	3136	4646	0.67	69.5	22.6	C

Segment 4: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.769	0.935	3136	93	4646	1936	0.67	0.05	59.5	59.5	26.4	28.5	D

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.769	3022	4646	0.65	70.3	21.5	C

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.769	0.943	3061	39	4646	1936	0.66	0.02	61.5	61.5	24.9	27.5	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.725	3257	4646	0.70	68.6	23.7	C

Segment 8: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.725	0.862	3257	416	4646	2033	0.70	0.20	62.6	62.6	26.0	29.6	D

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.725	2762	4646	0.59	71.8	19.2	C

Segment 10: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.746	0.862	2894	210	4646	2033	0.62	0.10	62.3	62.3	23.2	25.8	C

Segment 11: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.725	3011	4646	0.65	70.4	21.4	C

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	67.2	23.6	17.6	4.90	D

Facility Overall Results

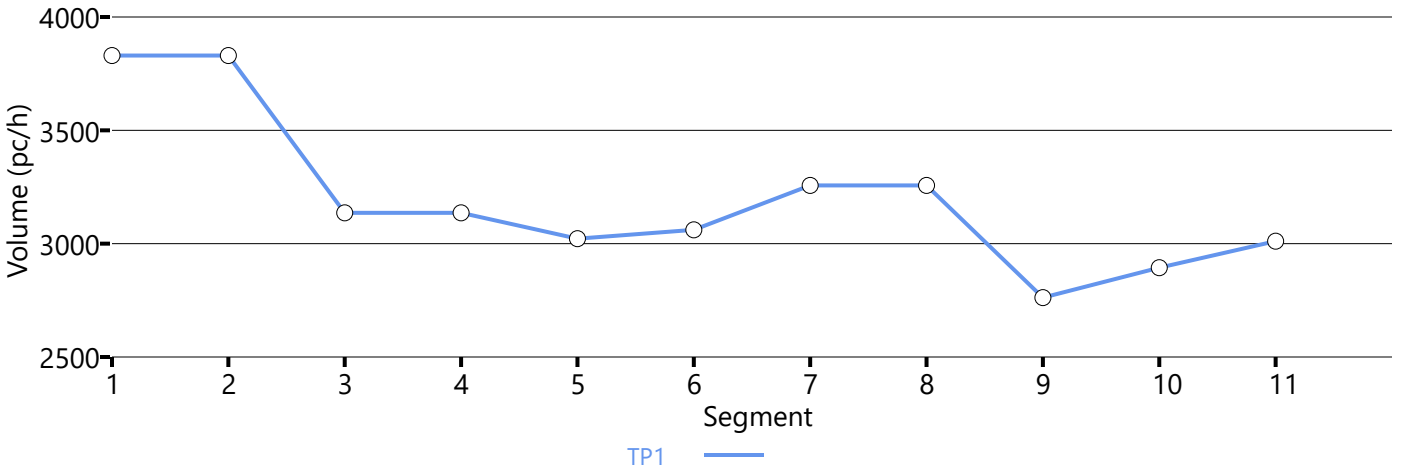
Space Mean Speed, mi/h	67.2	Density, veh/mi/ln	17.6
Average Travel Time, min	4.90	Density, pc/mi/ln	23.6

Messages

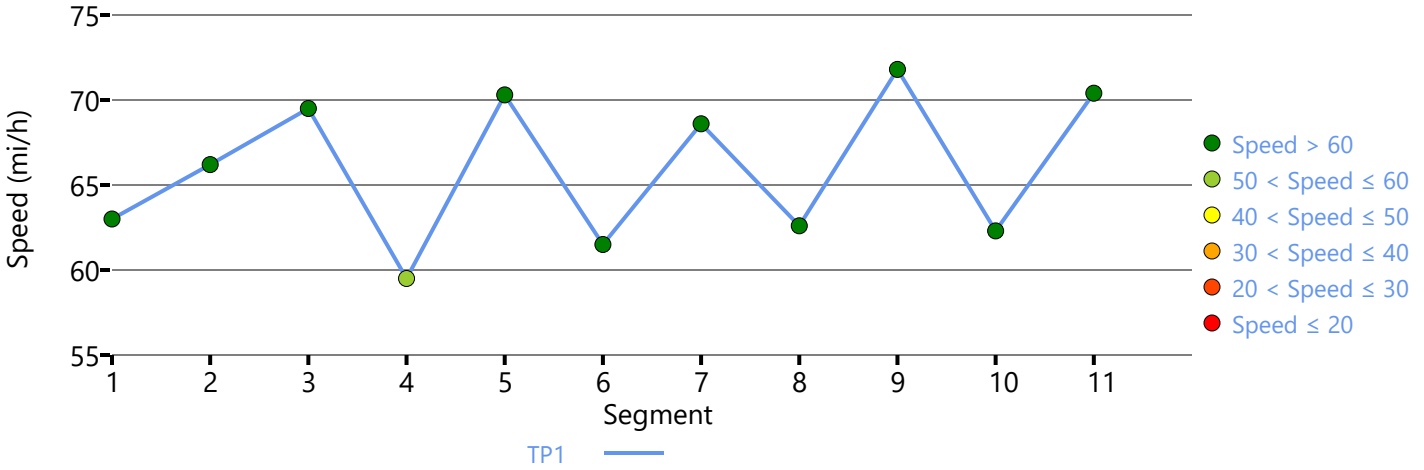
Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
Segment 13 segment length is 1,180', however HCS software requires minimum 1,000' additional length from short length.

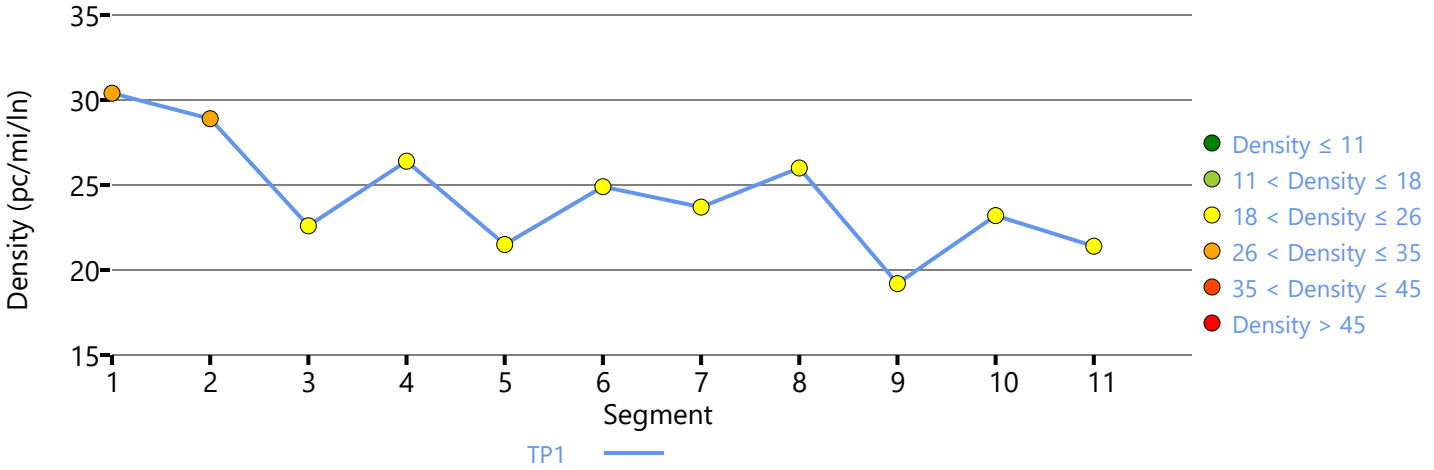
Volume Distribution



Speed Distribution



Density Distribution



HCS7 Freeway Facilities Report

Project Information

Analyst	EST Traffic Group	Date	10/1/20
Agency	ODOT	Analysis Year	2045
Jurisdiction	City of Purcell, OK	Time Period Analyzed	SB - PM Peak Hour - Alternative 3.1
Project Description	Purcell - AJR -Interchange Analysis	Unit	United States Customary

Facility Global Input

Jam Density, pc/mi/ln	190.0	Density at Capacity, pc/mi/ln	45.0
Queue Discharge Capacity Drop, %	7	Total Segments	11
Total Time Periods	1	Time Period Duration, min	15
Facility Length, mi	5.48		

Facility Segment Data

No.	Coded	Analyzed	Name	Length, ft	Lanes
1	Basic	Basic	Study Limit - Start SB	300	2
2	Diverge	Diverge	N Green Ave (SH 74) Off	1500	2
3	Basic	Basic	N Green Ave (SH 74) Off to Grant Off	4100	2
4	Diverge	Diverge	Grant St Off	1500	2
5	Basic	Basic	Grant St Off to Grant St On	2000	2
6	Merge	Merge	Grant St On	1500	2
7	Basic	Basic	Grant St On to SH 74 (South) Off	12330	2
8	Diverge	Diverge	SH 74 (South) Off	1500	2
9	Basic	Basic	SH 74 (South) Off to SH 74 (South) On	2380	2
10	Merge	Merge	SH 74 (South) On	1500	2
11	Basic	Basic	Study Limit - End SB	300	2

Facility Segment Data

Segment 1: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.820	3105	4646	0.67	69.7	22.3	C

Segment 2: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.820	0.952	3105	564	4646	2130	0.67	0.26	66.2	66.2	23.5	27.4	C

Segment 3: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.820	2451	4646	0.53	73.0	16.8	B

Segment 4: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.820	0.952	2451	92	4646	1936	0.53	0.05	59.5	59.5	20.6	22.6	C

Segment 5: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.820	2344	4646	0.50	72.9	16.0	B

Segment 6: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.820	0.962	2390	46	4646	1936	0.51	0.02	62.8	62.8	19.0	22.3	C

Segment 7: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.787	2498	4646	0.54	72.8	17.2	B

Segment 8: Diverge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.787	0.935	2498	463	4646	2033	0.54	0.23	62.5	62.5	20.0	23.0	C

Segment 9: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.787	1949	4646	0.42	73.2	13.2	B

Segment 10: Merge

Time Period	PHF		fHV		Flow Rate (pc/h)		Capacity (pc/h)		d/c Ratio		Speed (mi/h)		Density (pc/mi/ln)		LOS
	F	R	F	R	Freeway	Ramp	Freeway	Ramp	F	R	F	R	Freeway	Ramp	
1	0.95	0.95	0.787	0.862	2204	255	4646	2033	0.47	0.13	63.4	63.4	17.4	20.4	C

Segment 11: Basic

Time Period	PHF	fHV	Flow Rate (pc/h)	Capacity (pc/h)	d/c Ratio	Speed (mi/h)	Density (pc/mi/ln)	LOS
1	0.95	0.787	2228	4646	0.48	71.3	15.2	B

Facility Time Period Results

T	Speed, mi/h	Density, pc/mi/ln	Density, veh/mi/ln	Travel Time, min	LOS
1	69.9	17.5	14.0	4.70	C

Facility Overall Results

Space Mean Speed, mi/h	69.9	Density, veh/mi/ln	14.0
Average Travel Time, min	4.70	Density, pc/mi/ln	17.5

Messages

Comments

Segment 7 diverge has a capacity vs demand issue.
Segment 8 segment length is 200', however HCS software requires minimum 300' length.
Segment 11 segment length is 1,790', however HCS software requires minimum 1,000' additional length from short length.
Segment 13 diverge has a capacity vs demand issue.
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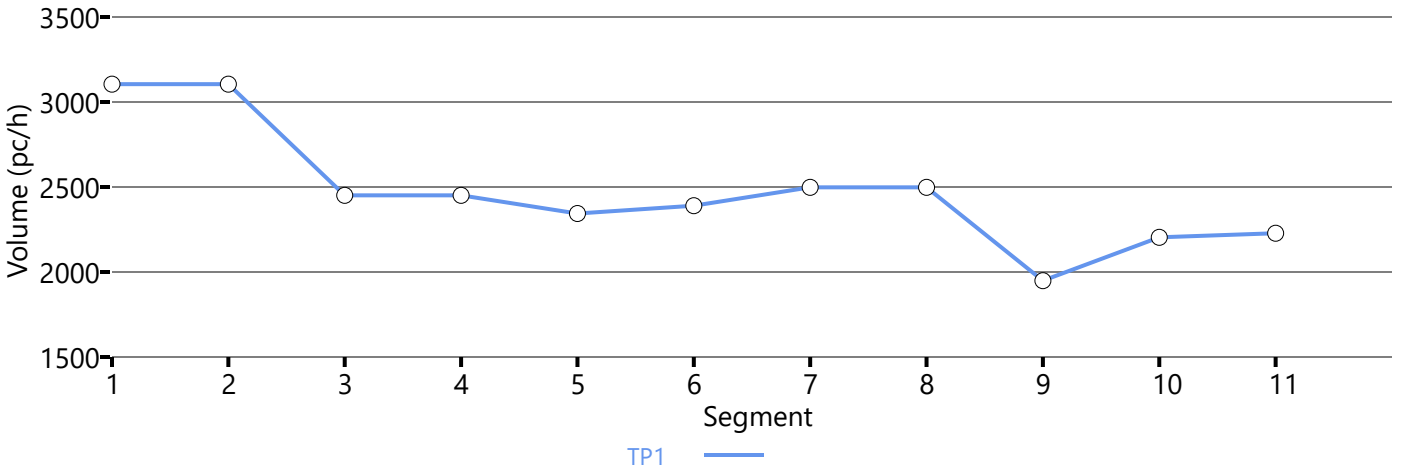
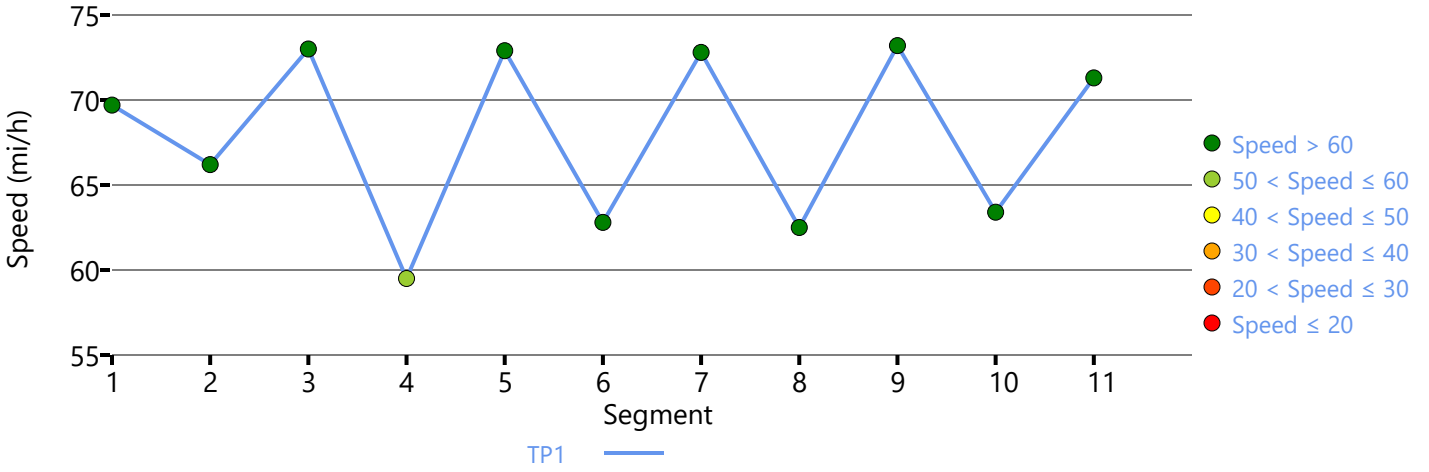
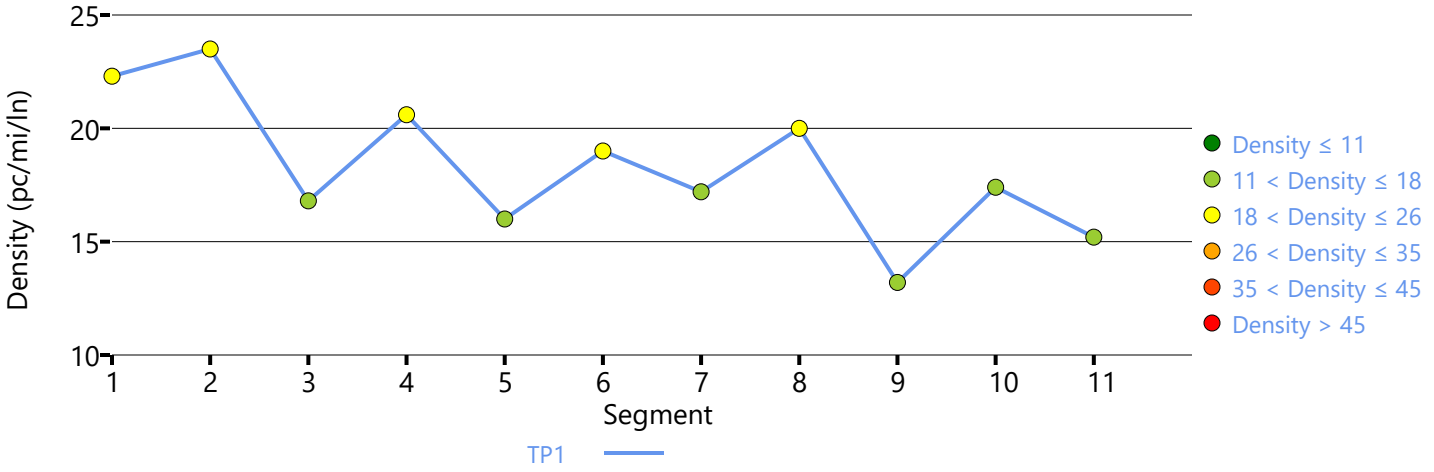
Volume Distribution



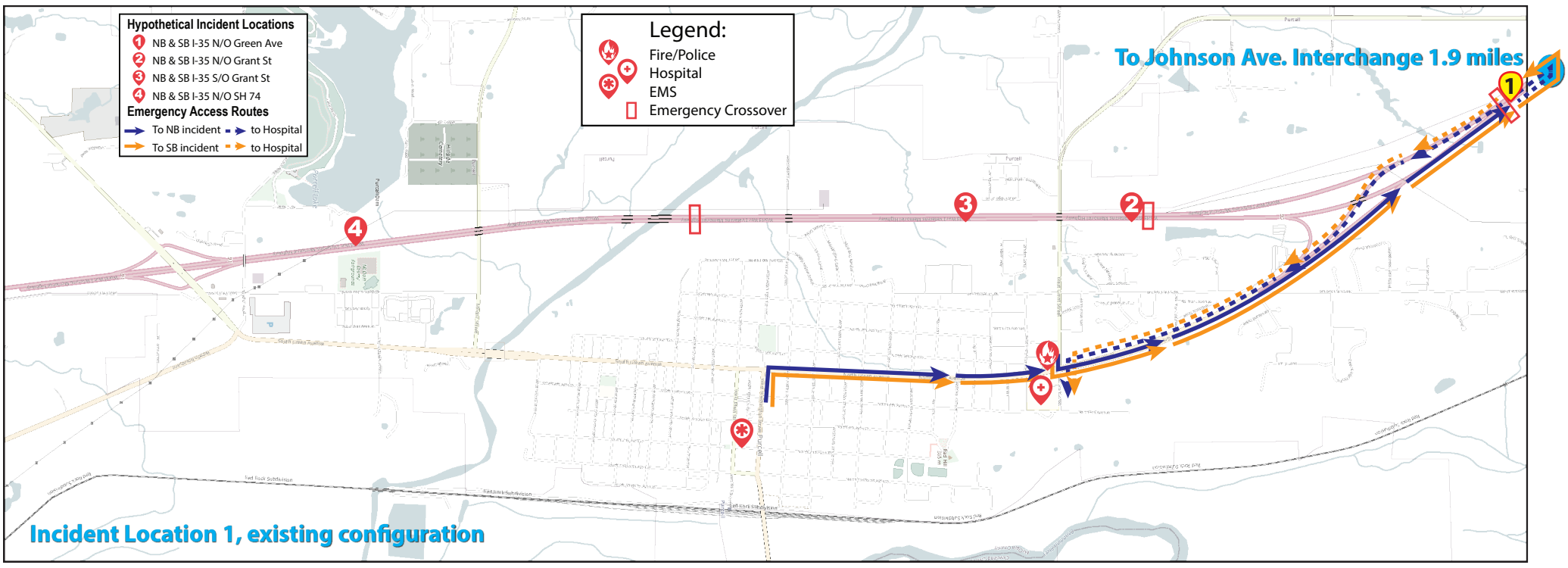
Speed Distribution

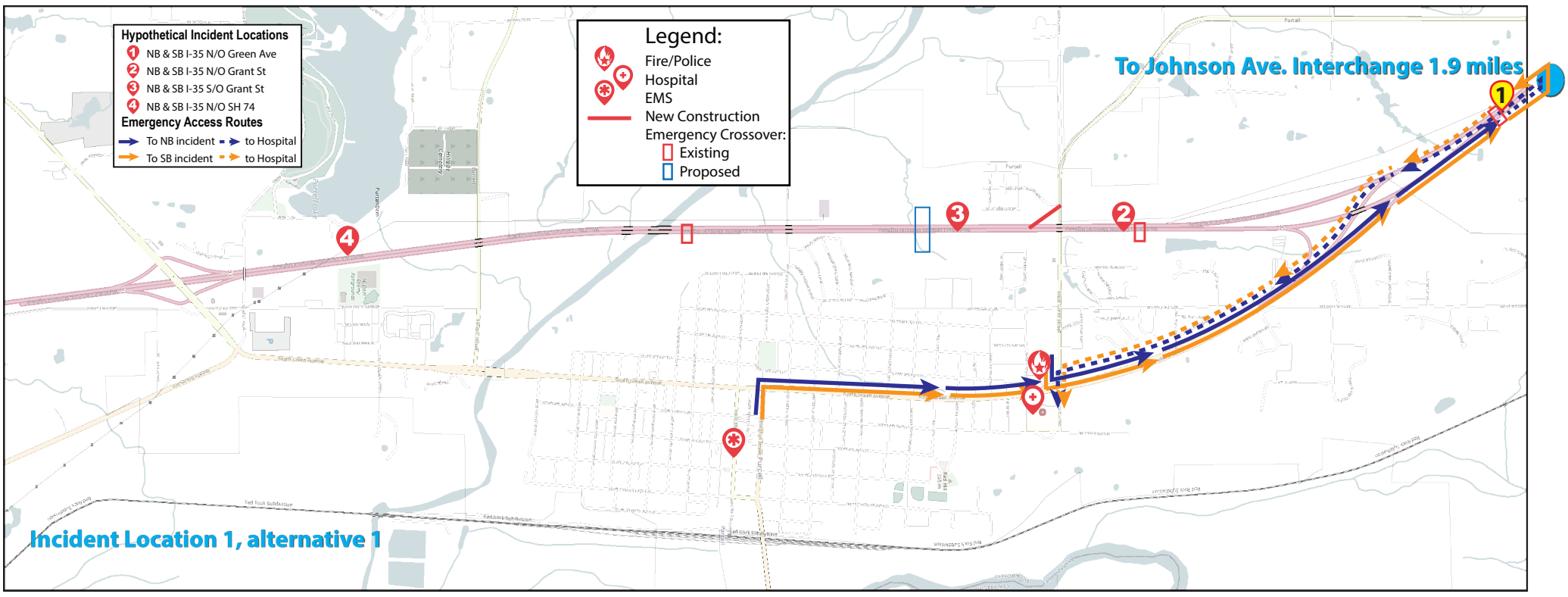


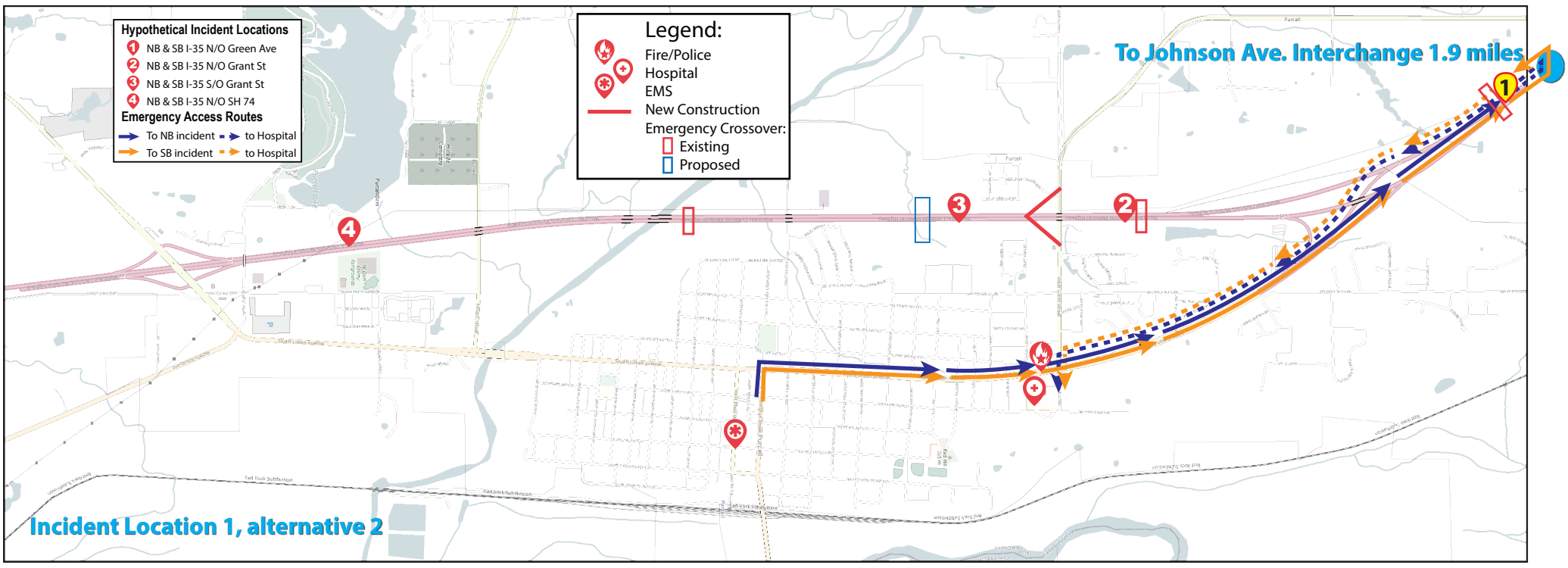
Density Distribution



APPENDIX D EMERGENCY RESPONSE ROUTING


Hypothetical Incident Locations
1 NB & SB I-35 N/O Green Ave
2 NB & SB I-35 N/O Grant St
3 NB & SB I-35 S/O Grant St
4 NB & SB I-35 N/O SH 74
Emergency Access Routes
To NB incident to Hospital
To SB incident to Hospital
Legend:
Fire/Police
Hospital
EMS
Emergency Crossover
To Johnson Ave. Interchange 1.9 miles
Incident Location 1, existing configuration


Hypothetical Incident Locations
1 NB & SB I-35 N/O Green Ave
2 NB & SB I-35 N/O Grant St
3 NB & SB I-35 S/O Grant St
4 NB & SB I-35 N/O SH 74
Emergency Access Routes
To NB incident to Hospital
To SB incident to Hospital
Legend:
Fire/Police
Hospital
EMS
New Construction
Emergency Crossover:
Existing
Proposed
To Johnson Ave. Interchange 1.9 miles
Incident Location 1, alternative 1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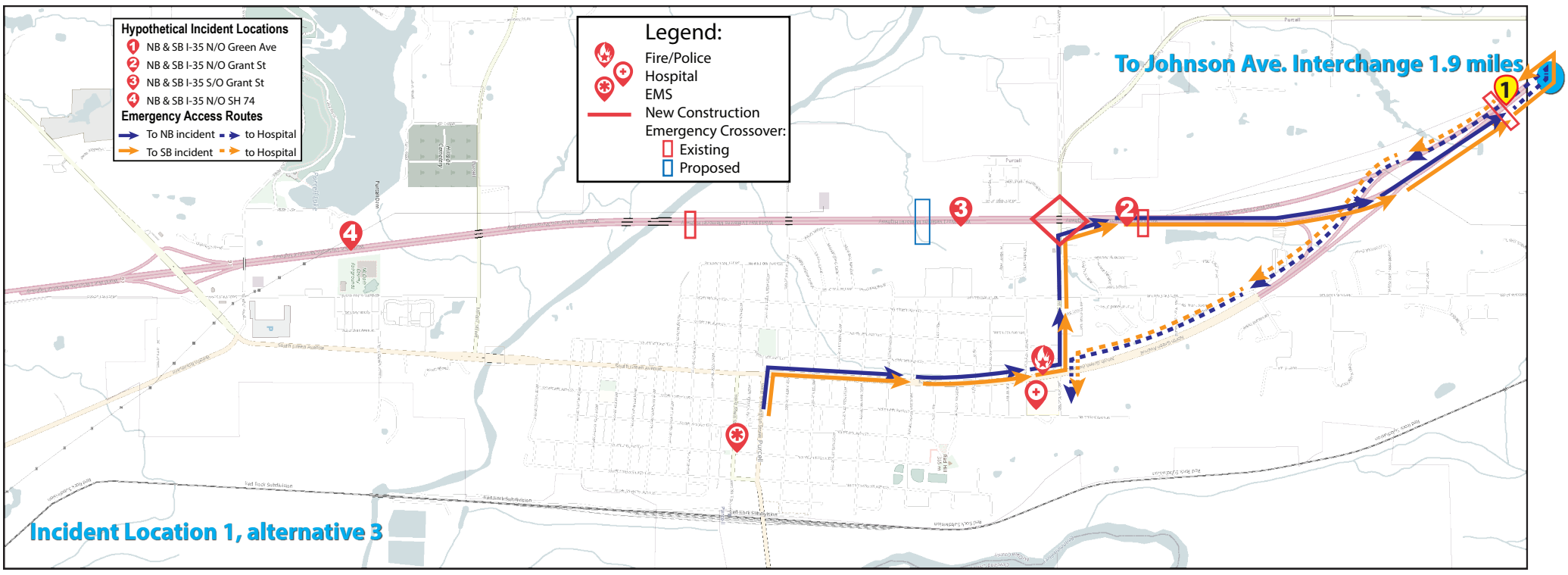
1 NB & SB I-35 N/O Green Ave
2 NB & SB I-35 N/O Grant St
3 NB & SB I-35 S/O Grant St
4 NB & SB I-35 N/O SH 74
Emergency Access Routes
To NB incident to Hospital
To SB incident to Hospital
Legend:
Fire/Police
Hospital
EMS
New Construction
Emergency Crossover:
Existing
Proposed
To Johnson Ave. Interchange 1.9 miles
Incident Location 1, alternative 2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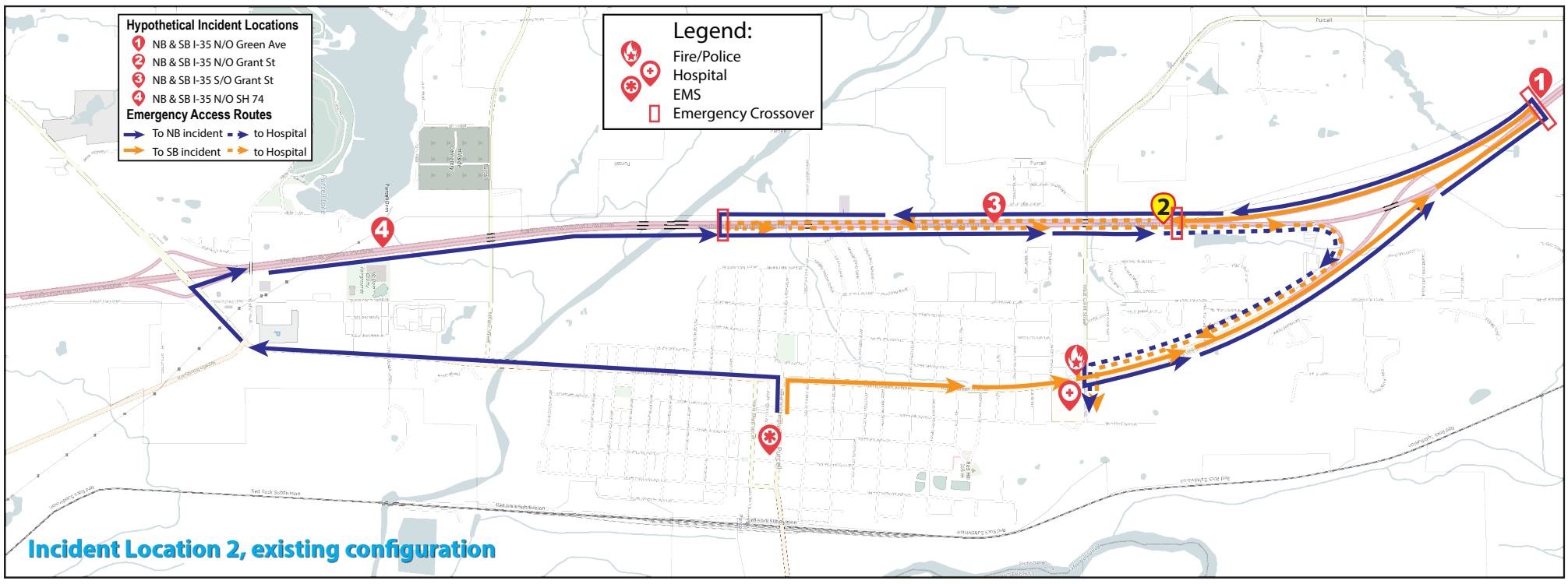
2 NB & SB I-35 N/O Grant St
3 NB & SB I-35 S/O Grant St
4 NB & SB I-35 N/O SH 74
Emergency Access Routes
To NB incident to Hospital
To SB incident to Hospital
Legend:
Fire/Police
Hospital
EMS
New Construction
Emergency Crossover:
Existing
Proposed
To Johnson Ave. Interchange 1.9 miles
Incident Location 1, alternative 3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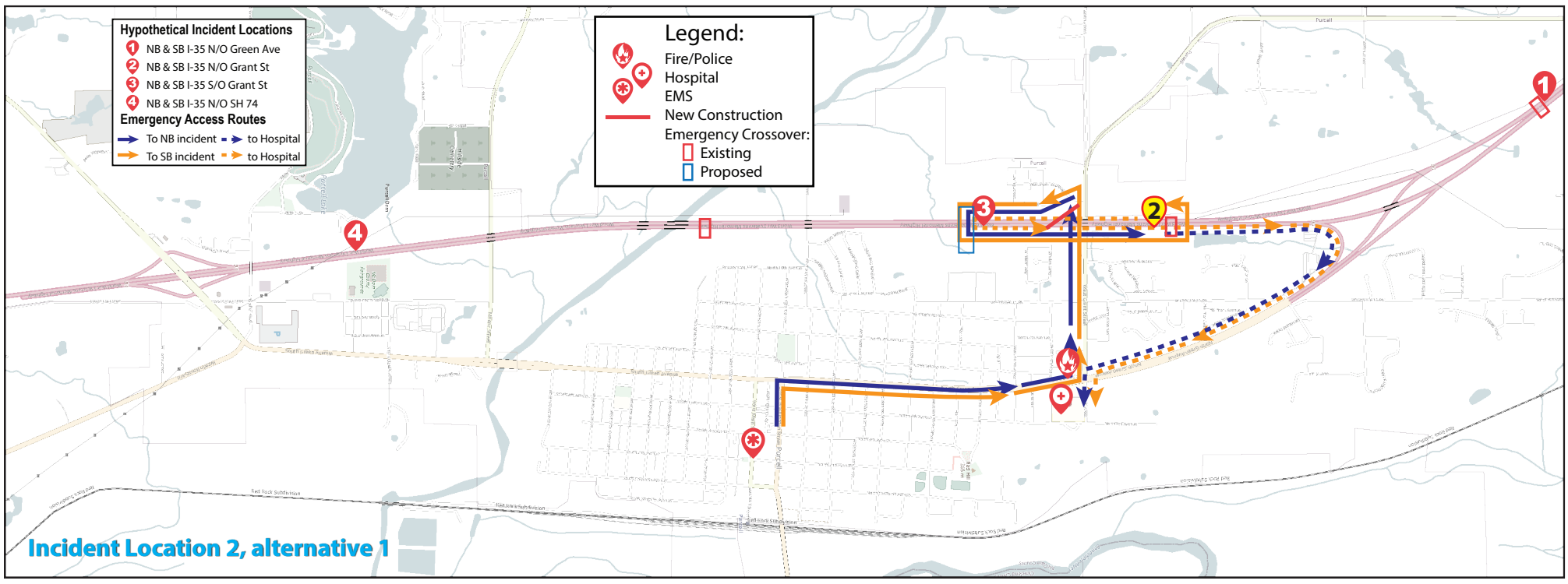
4 NB & SB I-35 N/O SH 74
Emergency Access Routes
To NB incident to Hospital
To SB incident to Hospital
Legend:
Fire/Police
Hospital
EMS
Emergency Crossover
Incident Location 2, existing configuration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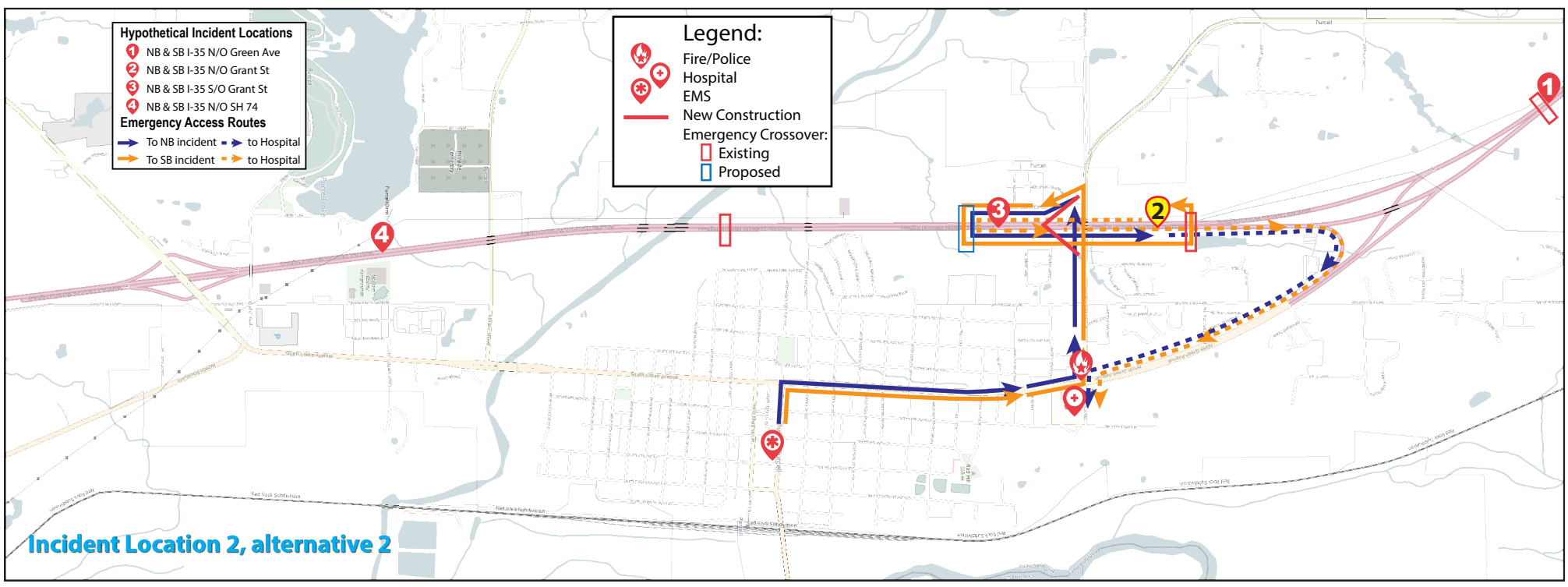
2 NB & SB I-35 N/O Grant St
3 NB & SB I-35 S/O Grant St
4 NB & SB I-35 N/O SH 74
Emergency Access Routes
To NB incident to Hospital
To SB incident to Hospital
Legend:
Fire/Police
Hospital
EMS
New Construction
Emergency Crossover:
Existing
Proposed
Incident Location 2, alternative 1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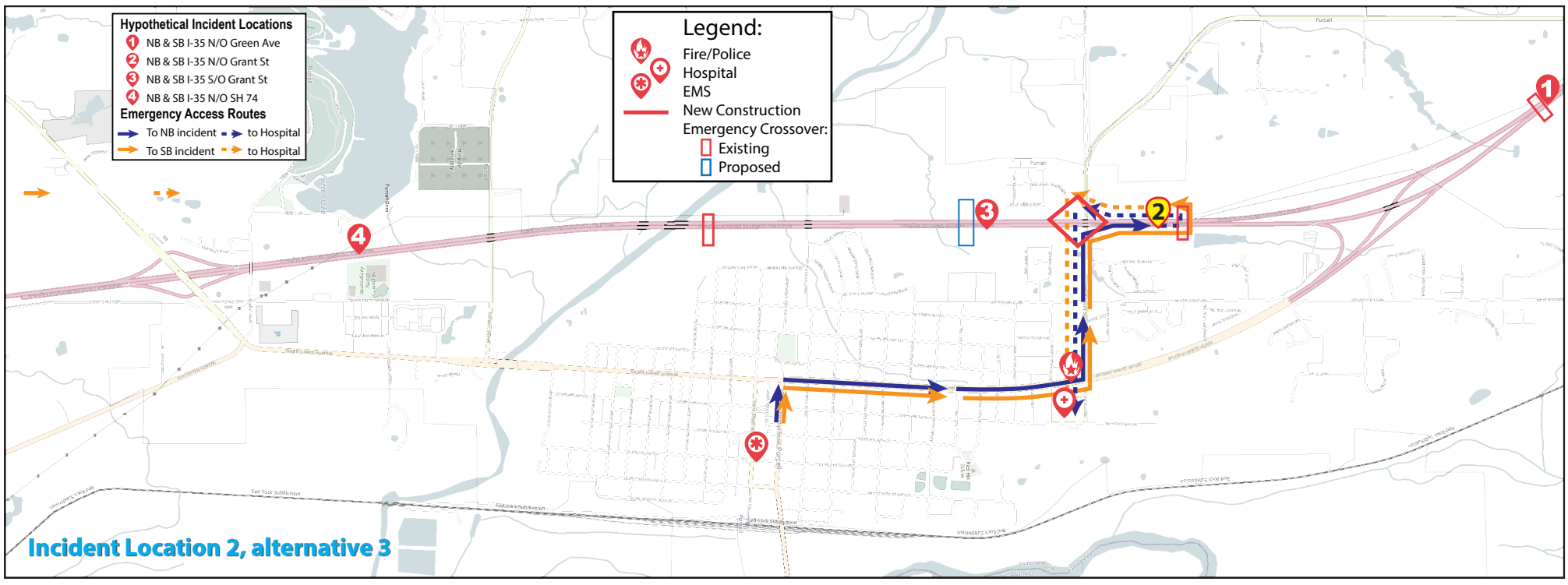
2 NB & SB I-35 N/O Grant St
3 NB & SB I-35 S/O Grant St
4 NB & SB I-35 N/O SH 74
Emergency Access Routes
To NB incident to Hospital
To SB incident to Hospital
Legend:
Fire/Police
Hospital
EMS
New Construction
Emergency Crossover:
Existing
Proposed
Incident Location 2, alternative 2


Hypothetical Incident Locations
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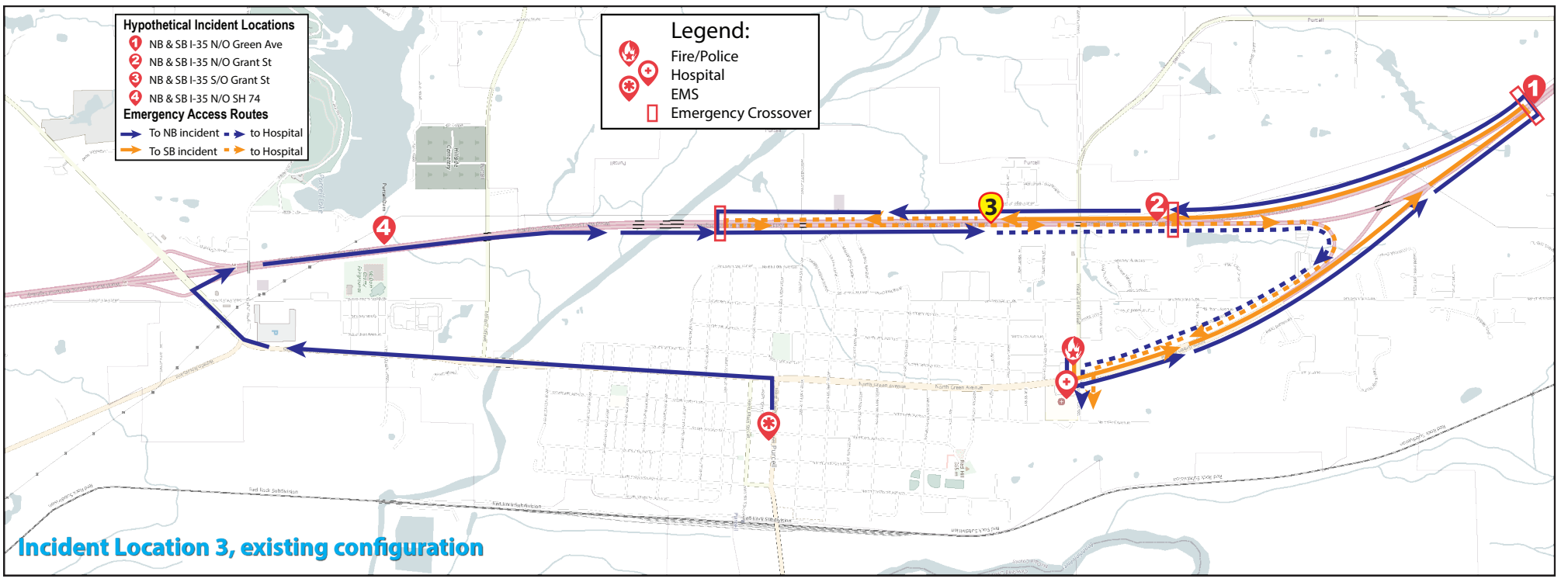
2 NB & SB I-35 N/O Grant St
3 NB & SB I-35 S/O Grant St
4 NB & SB I-35 N/O SH 74
Emergency Access Routes
To NB incident to Hospital
To SB incident to Hospital
Legend:
Fire/Police
Hospital
EMS
New Construction
Emergency Crossover:
Existing
Proposed
Incident Location 2, alternative 3


Hypothetical Incident Locations
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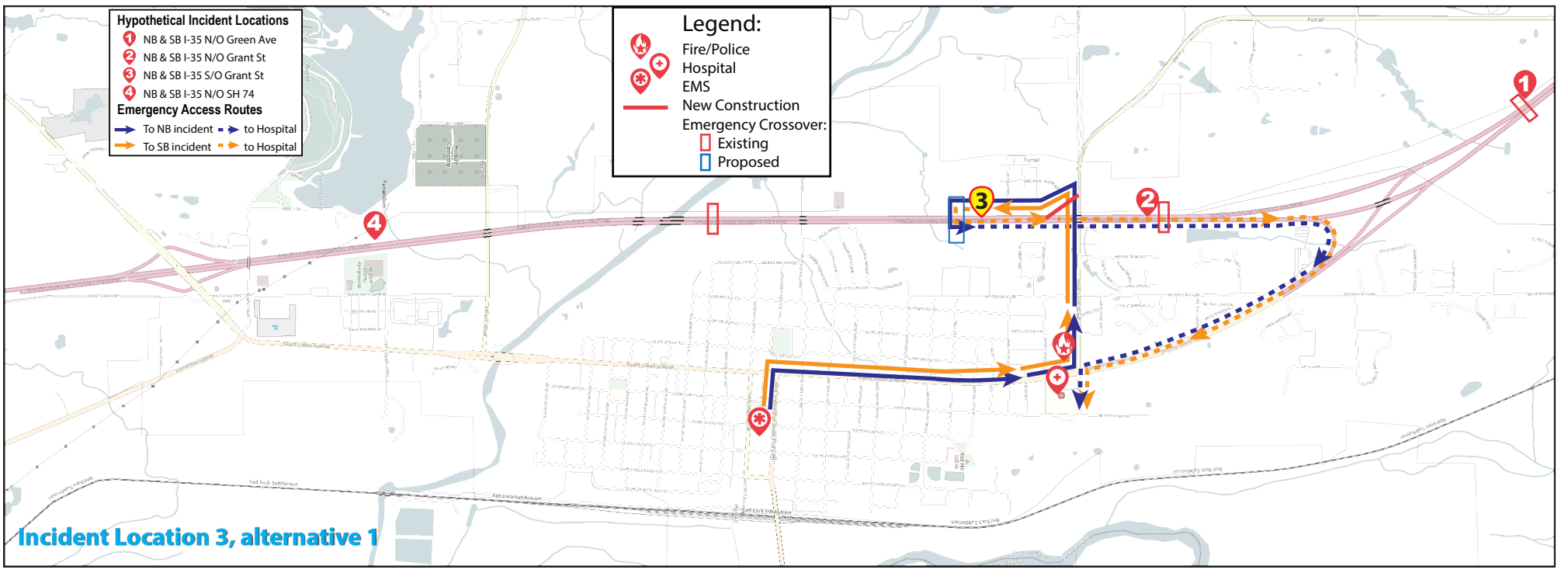
2 NB & SB I-35 N/O Grant St
3 NB & SB I-35 S/O Grant St
4 NB & SB I-35 N/O SH 74
Emergency Access Routes
To NB incident to Hospital
To SB incident to Hospital
Legend:
Fire/Police
Hospital
EMS
Emergency Crossover
Incident Location 3, existing configuration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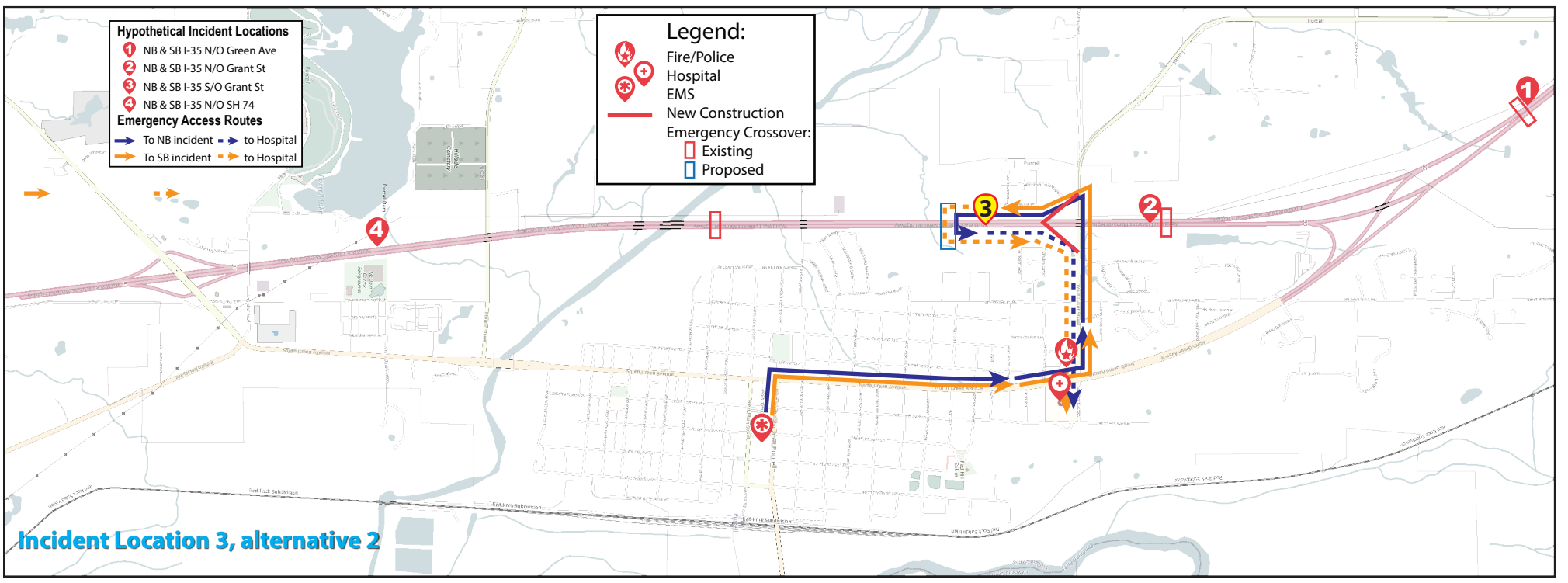
2 NB & SB I-35 N/O Grant St
3 NB & SB I-35 S/O Grant St
4 NB & SB I-35 N/O SH 74
Emergency Access Routes
To NB incident to Hospital
To SB incident to Hospital
Legend:
Fire/Police
Hospital
EMS
New Construction
Emergency Crossover:
Existing
Proposed
Incident Location 3, alternative 1


Hypothetical Incident Locations
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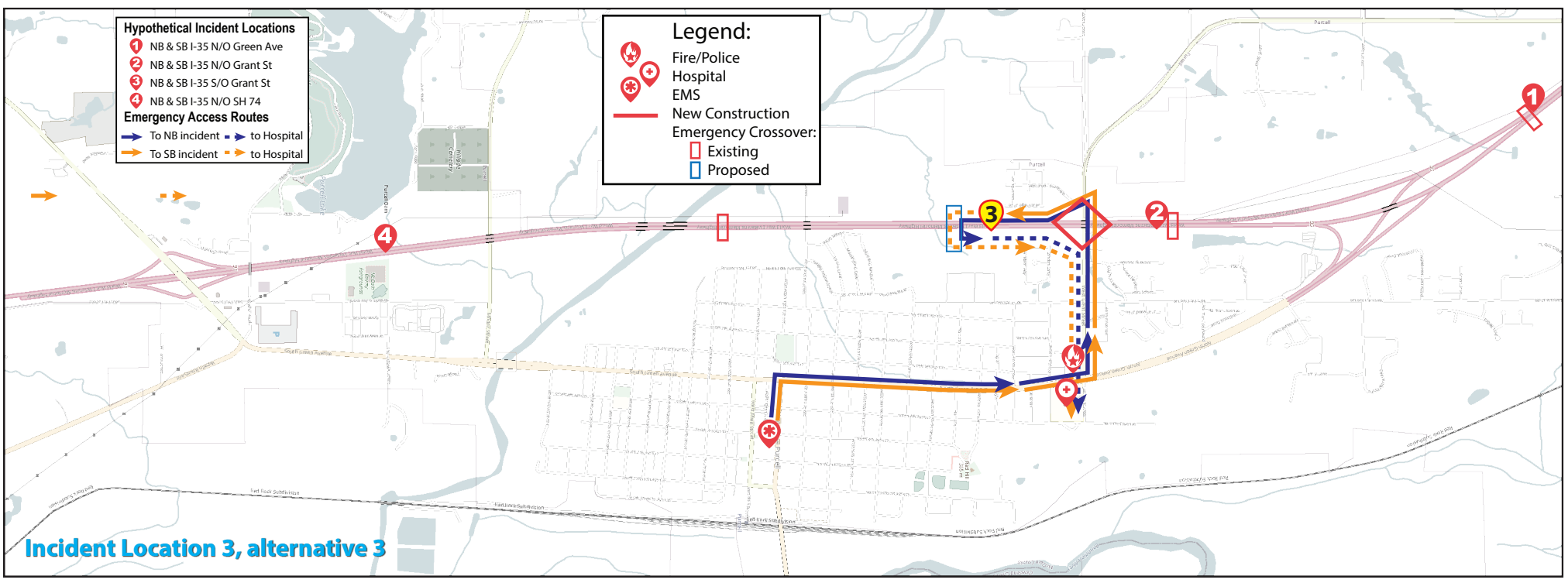
2 NB & SB I-35 N/O Grant St
3 NB & SB I-35 S/O Grant St
4 NB & SB I-35 N/O SH 74
Emergency Access Routes
To NB incident to Hospital
To SB incident to Hospital
Legend:
Fire/Police
Hospital
EMS
New Construction
Emergency Crossover:
Existing
Proposed
Incident Location 3, alternative 2


Hypothetical Incident Locations
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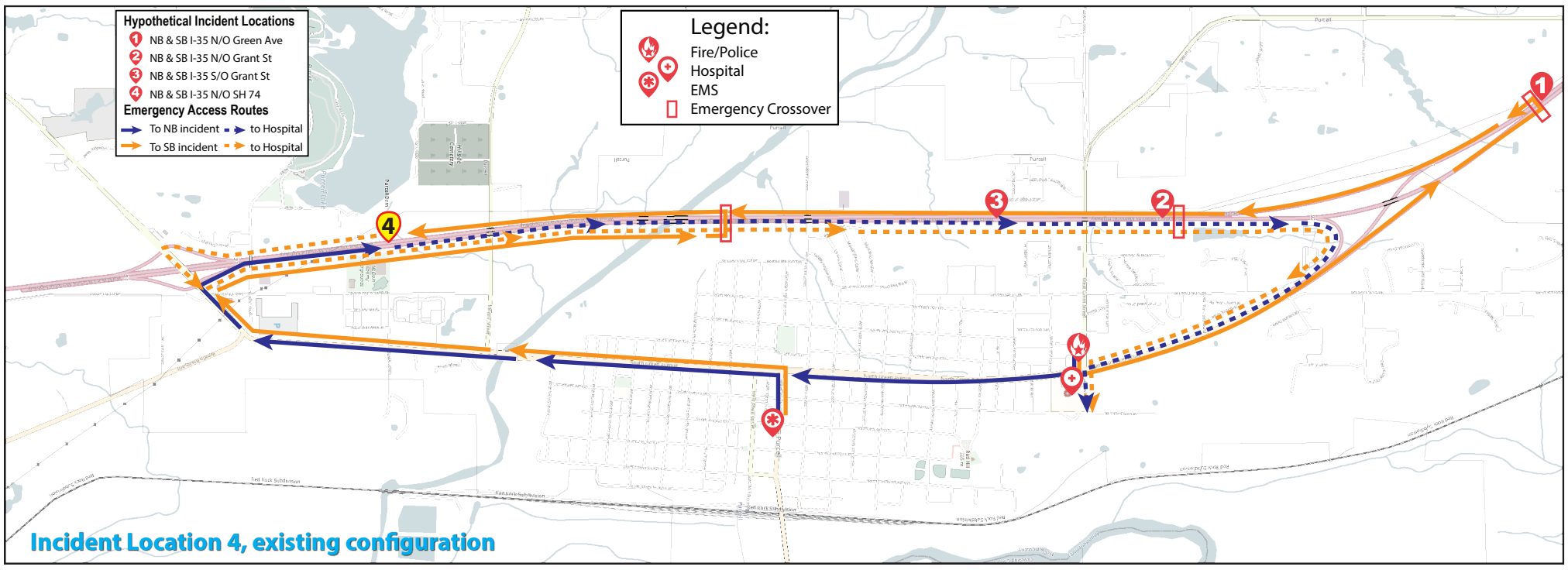
2 NB & SB I-35 N/O Grant St
3 NB & SB I-35 S/O Grant St
4 NB & SB I-35 N/O SH 74
Emergency Access Routes
To NB incident to Hospital
To SB incident to Hospital
Legend:
Fire/Police
Hospital
EMS
New Construction
Emergency Crossover:
Existing
Proposed
Incident Location 3, alternative 3


Hypothetical Incident Locations
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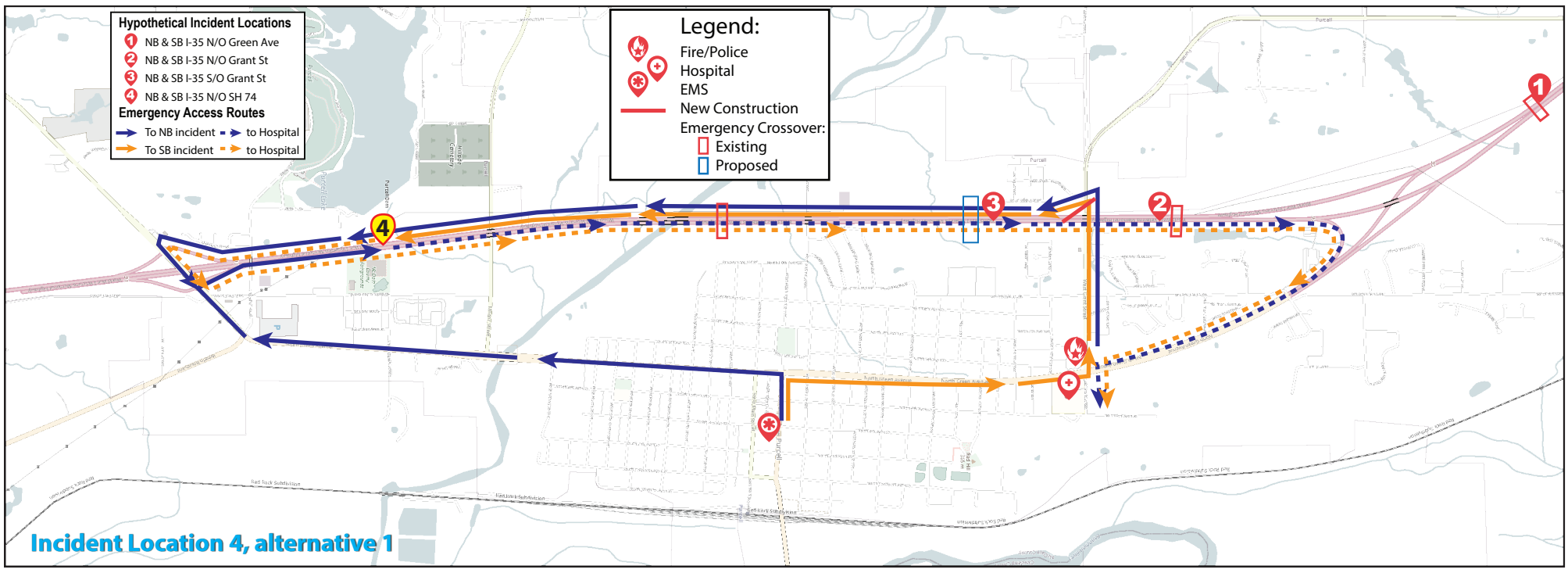
2 NB & SB I-35 N/O Grant St
3 NB & SB I-35 S/O Grant St
4 NB & SB I-35 N/O SH 74
Emergency Access Routes
To NB incident
to Hospital
To SB incident
to Hospital
Legend:
Fire/Police
Hospital
EMS
Emergency Crossover
Incident Location 4, existing configuration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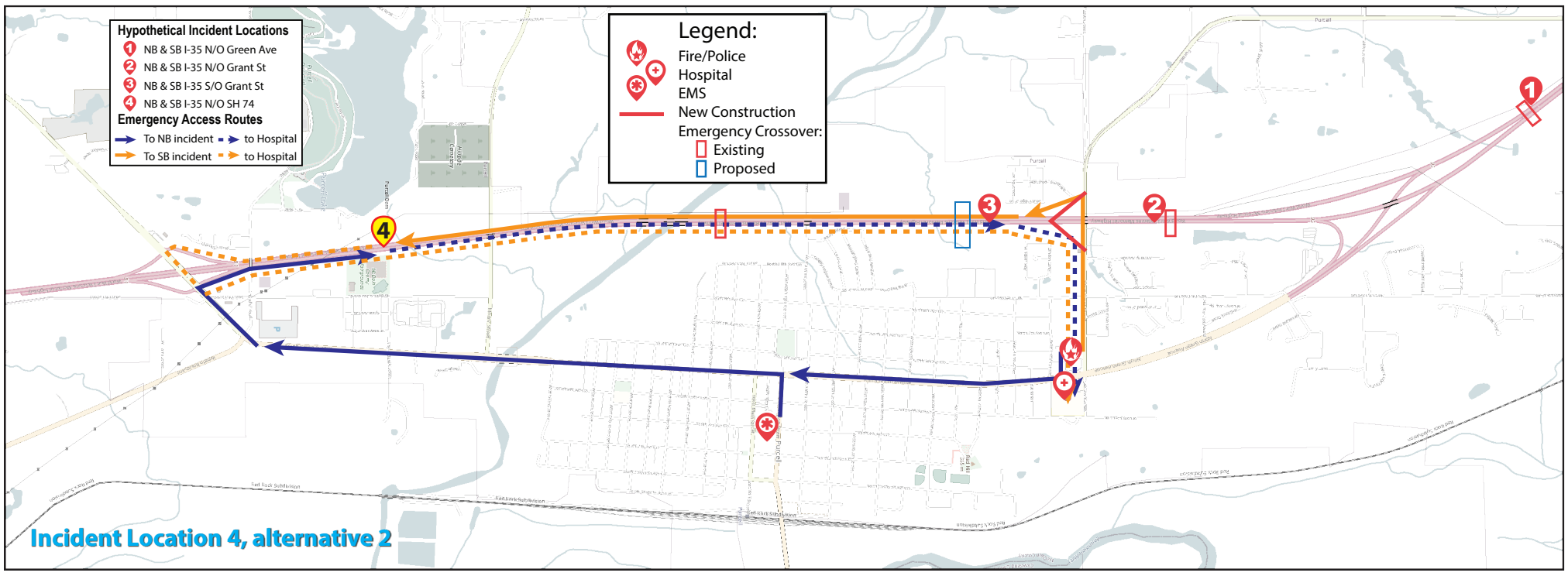
4 NB & SB I-35 N/O SH 74
Emergency Access Routes
To NB incident
to Hospital
To SB incident
to Hospital
Legend:
Fire/Police
Hospital
EMS
New Construction
Emergency Crossover:
Existing
Proposed
Incident Location 4, alternative 1


Hypothetical Incident Locations
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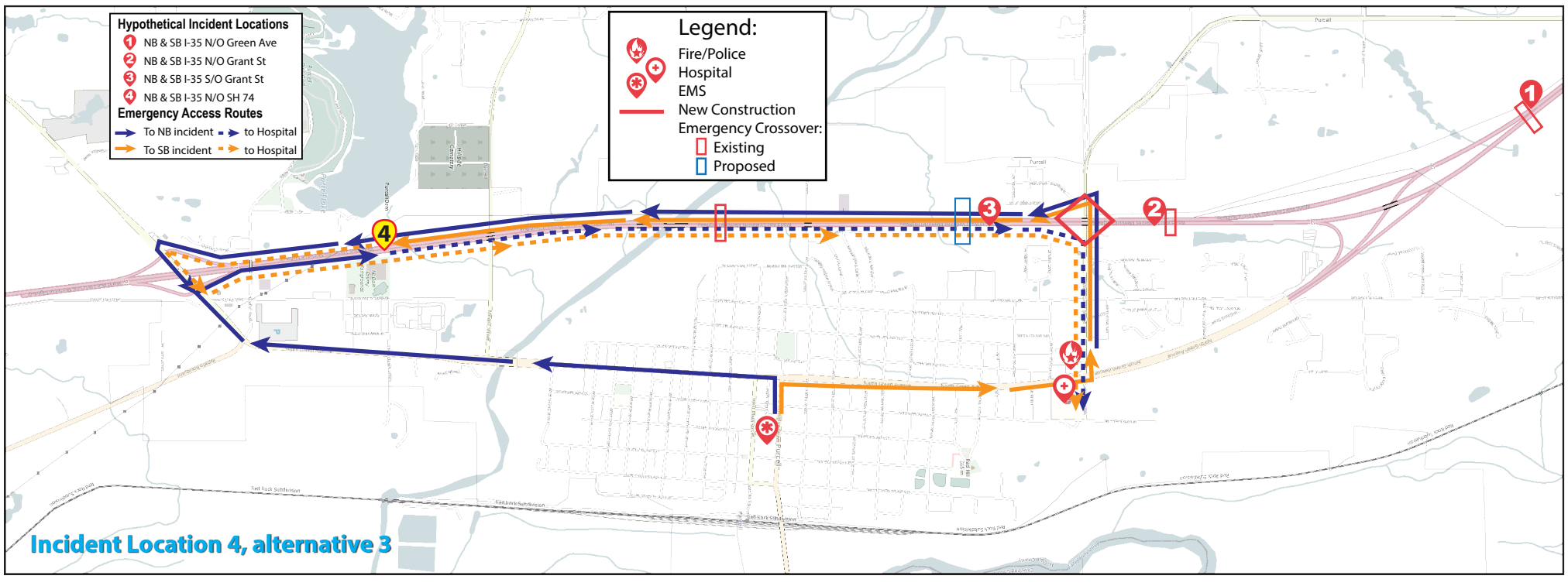
2 NB & SB I-35 N/O Grant St
3 NB & SB I-35 S/O Grant St
4 NB & SB I-35 N/O SH 74
Emergency Access Routes
To NB incident
to Hospital
To SB incident
to Hospital
Legend:
Fire/Police
Hospital
EMS
New Construction
Emergency Crossover:
Existing
Proposed
Incident Location 4, alternative 2


Hypothetical Incident Locations
1 NB & SB I-35 N/O Green Ave
2 NB & SB I-35 N/O Grant St
3 NB & SB I-35 S/O Grant St
4 NB & SB I-35 N/O SH 74
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To NB incident
to Hospital
To SB incident
to Hospital
Legend:
Fire/Police
Hospital
EMS
New Construction
Emergency Crossover:
Existing
Proposed
Incident Location 4, alternative 3

APPENDIX B: TRAFFIC DATA DEVELOPMENT

480 24th Avenue NW, Suite 244
Norman, OK 73069

Phone: (405) 307-8387
Fax: (405) 701-1965

Comprehensive Engineering Services

Memo # 1: Traffic Data Development, 2020 Raw Traffic Data

To: Mr. Matthew Blakeslee
From: Jerod Wilkins
Date: June 26, 2020

Reference: **Purcell-I-35 Interchange**

Introduction

This memo presents the methodology and assumptions used to develop the 2020 raw traffic data map from the traffic data collected on Tuesday June 16, 2020 within the study area. It also describes the steps to develop the 2020 and 2045 "Design" traffic data maps.

Raw Traffic Data Development

Below is a description of the types of 2020 raw traffic data collected within the study area:

- **24 Hour Directional** counts on I-35 mainline, on/off ramps, and Grant Street (19 locations)
- **24 Hour TMC (Traffic Movement Count)** at the intersection of N Green Avenue and W Grant Street (1 location)
- **Typical AM/PM TMC** during 6:00 AM to 9:00 AM and 3:00 PM to 6:00 PM time periods, at 9 intersections

Figure 1, below, shows the location of collected traffic count data.

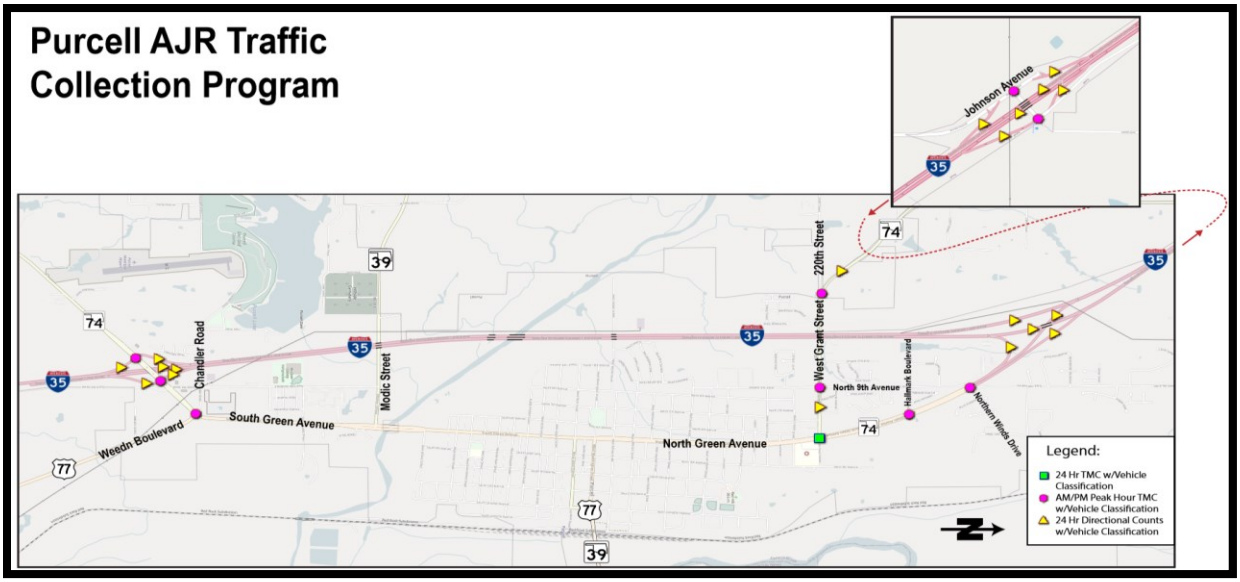

Figure 1: Traffic Data Collection Locations along the Study Area

Raw Data Quality Control

QA/QC was performed on raw traffic data at the intersections, On/Off Ramps, mainline I-35, and Grant Street. The goal was to identify anomalies and outliers, or missing data. The raw data was found to be reasonably consistent and acceptable.

We made an observation that Highest Hourly Count (HHC) determined from the 24-Hour traffic counts did not necessarily fall into typical AM/PM time periods, at all locations. During the development of "Design" traffic data map for existing +committed configuration, volumes will be balanced.

Raw Traffic Data Map-Roadway Segments

Raw traffic data displayed on the roadway segments of the "2020 Raw Traffic Data Map" (enclosed) are labeled as Daily and AM/PM/HHC volumes where:

- Daily: 24 Hour directional daily traffic count
- AM: Typical AM peak hour volume between 6:00 AM to 9:00 AM
- PM: Typical PM peak hour volume between 3:00 PM to 6:00 PM
- HHC: Highest hourly count during a 24-Hour count collection

Note: HHC should either be equal to one of the typical AM./ PM peak hour volumes or higher than the two.

Raw Traffic Data Map-Intersection Turning Movements

AM/PM peak hour volumes shown at each intersection were defined from the collected TMC during the typical AM/PM time period, except at the intersection of N Green Avenue and W Grant Street, where 24 Hour TMC counts were collected. Raw data at this intersection is reported for both typical AM/PM peak hours and HHC (i.e., AM/PM/HHC)

Developing 2020 (2045) design traffic data

Below are the steps and assumptions that are proposed to be applied to determine the 2020 and 2045 design traffic data:

1- Apply the seasonal adjustment and axel adjustment factors (provided by Oklahoma Department of Transportation (ODOT)) to 24 Hour raw traffic data
2- Apply the adjustment rates of 8% (City roadways) and 10% (highway links) to account for COVID-19
3- Apply the requested K and D factors for this area from ODOT and further adjust the traffic volumes to accommodate for Design Hourly Volume (DHV) and Directional Design Hourly Volume (DDHV).

4- Adjust typical AM/PM peak hour volumes to the corresponding AM/PM highest hourly volumes from 24-Hour data (if different), to ensure design concepts can accommodate the potentially higher volumes. This will also facilitate consistency in balancing the traffic data within the study area.

Note: 2020 Raw Traffic Data Map is enclosed.

APPENDIX C: CRASH PREDICTION REPORTS

Interactive Highway Safety Design Model

Crash Prediction Evaluation Report

(2045 - Existing Network)

August 12, 2021

Disclaimer

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Report Overview

Report Generated: Aug 12, 2021 4:01 PM
Report Template: System: Multi-Page, 508 Compliant [System] (mlcpm4, Aug 11, 2021 9:24 AM)

Evaluation Date: Thu Aug 12 15:55:55 MDT 2021
IHSDM Version: v16.0.0 (Sep 30, 2020)
Crash Prediction Module: v11.0.0 (Sep 30, 2020)

User Name: hamideh.etemadnia
Organization Name:
Phone:
E-Mail:

Project Title: Purcell - 2045 Existing (Copy 1)
Project Comment: Created using wizard
Project Unit System: U.S. Customary

Highway Title: I-35
Highway Comment: Created using wizard
Highway Version: 3

Evaluation Title: Evaluation 5
Evaluation Comment: Created Thu Aug 12 15:55:16 MDT 2021

Minimum Location: 0.000
Maximum Location: 270+00.000
Policy for Superelevation: AASHTO 2011 U.S. Customary
Calibration: HSM Configuration
Crash Distribution: HSM Configuration
Model/CMF: HSM Configuration
First Year of Analysis: 2045
Last Year of Analysis: 2045
Empirical-Bayes Analysis: None
First Year of Observed Crashes:
Last Year of Observed Crashes:

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 AND 17-58

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.

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 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: 0.000
Evaluation End Location: 270+00.000
Functional Class: Freeway
Type of Alignment: Divided, Multilane
Model Category: Freeway Segment
Calibration Factor: FI_EN=1.0; FI_EX=1.0; FI_MV=1.0; FI_SV=1.0; PDO_EN=1.0; PDO_EX=1.0; PDO_MV=1.0; PDO_SV=1.0;

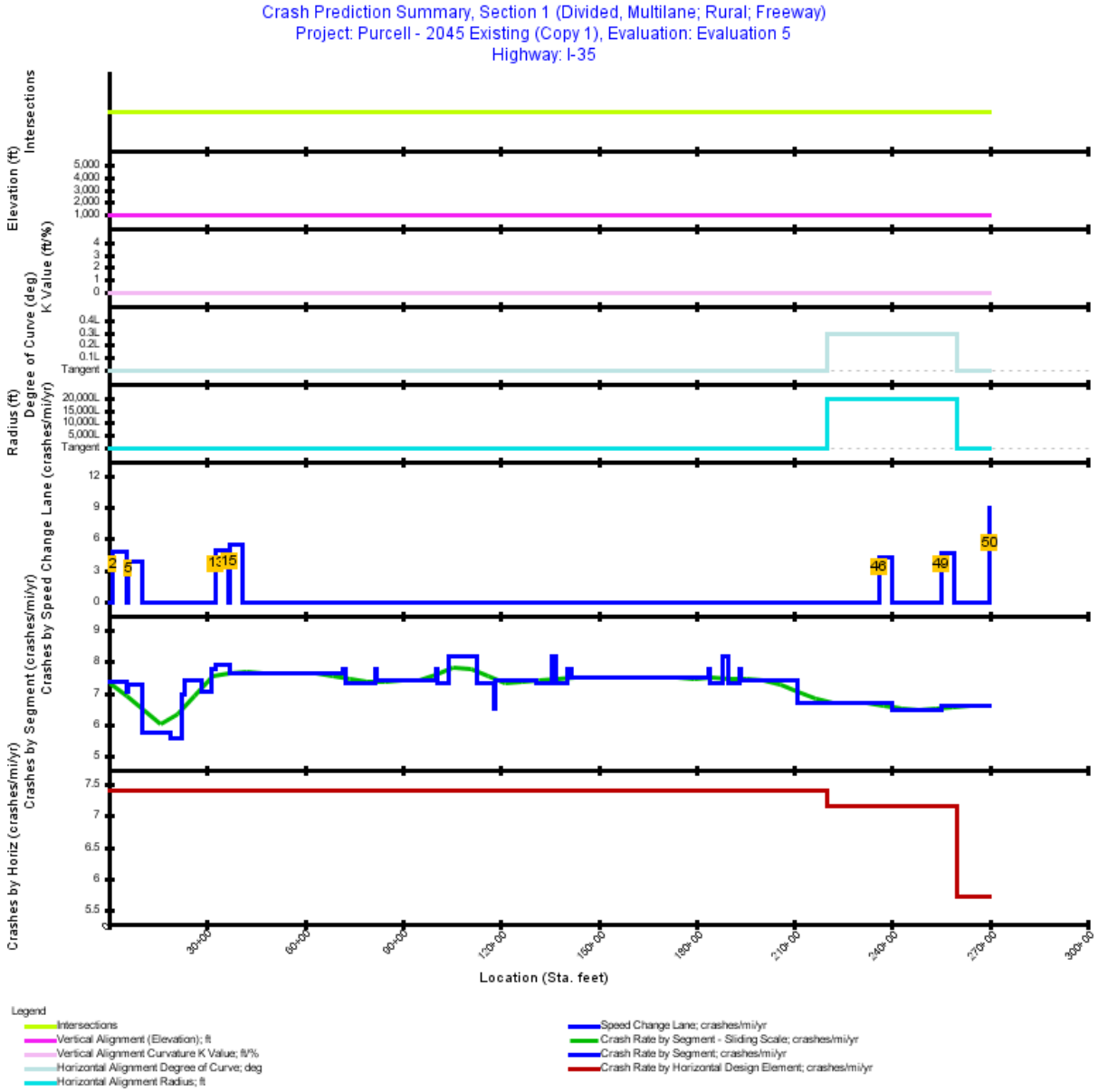

Figure 1. Crash Prediction Summary (Section 1)

Table 1. Evaluation Freeway - Homogeneous Segments (Section 1)

Seg. No.	Type	Area Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Median Width (ft)	Type	Effective Median Width (ft)
1	Four-lane Freeway	Rural	0.000	5+28.000	528.00	0.1000	2045: 36,496	30.00	Non-Traversable Median	38.00
3	Four-lane Freeway	Rural	5+28.000	6+00.000	72.00	0.0136	2045: 36,496	30.00	Non-Traversable Median	38.00
4	Four-lane Freeway	Rural	6+00.000	10+00.000	400.00	0.0758	2045: 36,496	30.00	Non-Traversable Median	38.00
6	Four-lane Freeway	Rural	10+00.000	18+82.000	882.00	0.1670	2045: 32,411	30.00	Non-Traversable Median	38.00
7	Four-lane Freeway	Rural	18+82.000	22+50.000	368.00	0.0697	2045: 32,411	30.00	Non-Traversable Median	38.00
8	Four-lane Freeway	Rural	22+50.000	23+24.000	74.00	0.0140	2045: 39,713	30.00	Non-Traversable Median	38.00
9	Four-lane Freeway	Rural	23+24.000	28+38.000	514.00	0.0973	2045: 39,713	30.00	Non-Traversable Median	38.00
10	Four-lane Freeway	Rural	28+38.000	31+44.000	306.00	0.0580	2045: 39,713	30.00	Non-Traversable Median	38.00
11	Four-lane Freeway	Rural	31+44.000	32+73.600	129.60	0.0245	2045: 39,713	30.00	Non-Traversable Median	38.00
12	Four-lane Freeway	Rural	32+73.600	36+96.000	422.40	0.0800	2045: 39,713	30.00	Non-Traversable Median	38.00
14	Four-lane Freeway	Rural	36+96.000	71+81.000	3,485.00	0.6600	2045: 39,713	30.00	Non-Traversable Median	38.00
16	Four-lane Freeway	Rural	71+81.000	72+34.000	53.00	0.0100	2045: 39,713	30.00	Non-Traversable Median	38.00
17	Four-lane Freeway	Rural	72+34.000	75+98.000	364.00	0.0689	2045: 39,713	30.00	Non-Traversable Median	38.00
18	Four-lane Freeway	Rural	75+98.000	77+36.000	138.00	0.0261	2045: 39,713	30.00	Non-Traversable Median	38.00
19	Four-lane Freeway	Rural	77+36.000	81+45.000	409.00	0.0775	2045: 39,713	30.00	Non-Traversable Median	38.00
20	Four-lane Freeway	Rural	81+45.000	81+83.000	38.00	0.0072	2045: 39,713	30.00	Non-Traversable Median	38.00
21	Four-lane Freeway	Rural	81+83.000	100+10.000	1,827.00	0.3460	2045: 39,713	30.00	Non-Traversable Median	38.00
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23	Four-lane Freeway	Rural	100+45.000	103+95.000	350.00	0.0663	2045: 39,713	30.00	Non-Traversable Median	38.00
24	Four-lane Freeway	Rural	103+95.000	104+73.000	78.00	0.0148	2045: 39,713	30.00	Non-Traversable Median	38.00
25	Four-lane Freeway	Rural	104+73.000	105+21.000	48.00	0.0091	2045: 39,713	30.00	Non-Traversable Median	38.00
26	Four-lane Freeway	Rural	105+21.000	105+31.000	10.00	0.0019	2045: 39,713	30.00	Non-Traversable Median	38.00
27	Four-lane Freeway	Rural	105+31.000	108+56.000	325.00	0.0616	2045: 39,713	30.00	Non-Traversable Median	38.00
28	Four-lane Freeway	Rural	108+56.000	108+91.000	35.00	0.0066	2045: 39,713	30.00	Non-Traversable Median	38.00
29	Four-lane Freeway	Rural	108+91.000	112+96.000	405.00	0.0767	2045: 39,713	30.00	Non-Traversable Median	38.00

Seg. No.	Type	Area Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Median Width (ft)	Type	Effective Median Width (ft)
30	Four-lane Freeway	Rural	112+96.000	113+31.000	35.00	0.0066	2045: 39,713	30.00	Non-Traversable Median	38.00
31	Four-lane Freeway	Rural	113+31.000	117+78.000	447.00	0.0847	2045: 39,713	30.00	Non-Traversable Median	38.00
32	Four-lane Freeway	Rural	117+78.000	118+40.000	62.00	0.0117	2045: 39,713	30.00	Non-Traversable Median	38.00
33	Four-lane Freeway	Rural	118+40.000	131+13.000	1,273.00	0.2411	2045: 39,713	30.00	Non-Traversable Median	38.00
34	Four-lane Freeway	Rural	131+13.000	135+55.000	442.00	0.0837	2045: 39,713	30.00	Non-Traversable Median	38.00
35	Four-lane Freeway	Rural	135+55.000	136+92.000	137.00	0.0259	2045: 39,713	30.00	Non-Traversable Median	38.00
36	Four-lane Freeway	Rural	136+92.000	140+50.000	358.00	0.0678	2045: 39,713	30.00	Non-Traversable Median	38.00
37	Four-lane Freeway	Rural	140+50.000	141+82.000	132.00	0.0250	2045: 39,713	30.00	Non-Traversable Median	38.00
38	Four-lane Freeway	Rural	141+82.000	183+90.000	4,208.00	0.7970	2045: 39,713	30.00	Non-Traversable Median	38.00
39	Four-lane Freeway	Rural	183+90.000	184+40.000	50.00	0.0095	2045: 39,713	30.00	Non-Traversable Median	38.00
40	Four-lane Freeway	Rural	184+40.000	188+04.000	364.00	0.0689	2045: 39,713	30.00	Non-Traversable Median	38.00
41	Four-lane Freeway	Rural	188+04.000	189+68.000	164.00	0.0311	2045: 39,713	30.00	Non-Traversable Median	38.00
42	Four-lane Freeway	Rural	189+68.000	193+20.000	352.00	0.0667	2045: 39,713	30.00	Non-Traversable Median	38.00
43	Four-lane Freeway	Rural	193+20.000	193+84.000	64.00	0.0121	2045: 39,713	30.00	Non-Traversable Median	38.00
44	Four-lane Freeway	Rural	193+84.000	210+97.000	1,713.00	0.3244	2045: 39,713	30.00	Non-Traversable Median	38.00
45	Four-lane Freeway	Rural	210+97.000	240+00.000	2,903.00	0.5498	2045: 39,713	30.00	Non-Traversable Median	38.00
47	Four-lane Freeway	Rural	240+00.000	255+00.000	1,500.00	0.2841	2045: 39,340	30.00	Non-Traversable Median	38.00
48	Four-lane Freeway	Rural	255+00.000	270+00.000	1,500.00	0.2841	2045: 39,340	30.00	Non-Traversable Median	38.00

Table 2. Evaluation Freeway - Speed Change Lanes (Speed Change)

Seg. No.	Type	Ramp Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Median Width (ft)	Type	Effective Median Width (ft)
2	Four-lane Freeway Speed Change	Entrance	1+28.000	5+28.000	400.00	0.0758	2045: 36,496	30.00	Non-Traversable Median	38.00
5	Four-lane Freeway Speed Change	Exit	6+00.000	10+00.000	400.00	0.0758	2045: 36,496	30.00	Non-Traversable Median	38.00
13	Four-lane Freeway Speed Change	Exit	32+73.600	36+73.600	400.00	0.0758	2045: 39,713	30.00	Non-Traversable Median	38.00
15	Four-lane Freeway Speed Change	Entrance	36+96.000	40+96.000	400.00	0.0758	2045: 39,713	30.00	Non-Traversable Median	38.00
46	Four-lane Freeway Speed Change	Exit	236+00.000	240+00.000	400.00	0.0758	2045: 39,713	30.00	Non-Traversable Median	38.00
49	Four-lane Freeway Speed Change	Entrance	255+00.000	259+00.000	400.00	0.0758	2045: 39,340	30.00	Non-Traversable Median	38.00
50	Four-lane Freeway Speed Change	Exit	269+99.997	270+00.000	0.00	0.0000	2045: 39,340	30.00	Non-Traversable Median	38.00

Table 3. Predicted Freeway Crash Rates and Frequencies Summary (Section 1)

First Year of Analysis	**2045**
Last Year of Analysis	**2045**
Effective Length (mi)	**4.8864**
Average Future Road AADT (vpd)	**39,244**
Predicted Crashes	
Total Crashes	**35.24**
Fatal and Injury Crashes	**11.27**
Property-Damage-Only Crashes	**23.98**
Percent of Total Predicted Crashes	
Percent Fatal and Injury Crashes (%)	**32**
Percent Property-Damage-Only Crashes (%)	**68**
Predicted Crash Rate	
Crash Rate (crashes/mi/yr)	**7.2122**
FI Crash Rate (crashes/mi/yr)	**2.3057**
PDO Crash Rate (crashes/mi/yr)	**4.9065**
Predicted Travel Crash Rate	
Total Travel (million veh-mi)	**69.99**
Travel Crash Rate (crashes/million veh-mi)	**0.50**
Travel FI Crash Rate (crashes/million veh-mi)	**0.16**
Travel PDO Crash Rate (crashes/million veh-mi)	**0.34**

Note: *Effective Length* is the *segment length* minus the length of the *speed change lanes* if present.

Table 4. Predicted Freeway Speed Change Lane Crash Rates and Frequencies Summary (Speed Change)

First Year of Analysis	**2045**
Last Year of Analysis	**2045**
Length (mi)	**0.4545**
Average Future Road AADT (vpd)	**19,289**
Predicted Crashes	
Total Crashes	**2.11**
Fatal and Injury Crashes	**0.65**
Property-Damage-Only Crashes	**1.46**
Percent of Total Predicted Crashes	
Percent Fatal and Injury Crashes (%)	**31**
Percent Property-Damage-Only Crashes (%)	**69**
Predicted Crash Rate	
Crash Rate (crashes/mi/yr)	**4.6441**
FI Crash Rate (crashes/mi/yr)	**1.4370**
PDO Crash Rate (crashes/mi/yr)	**3.2071**
Predicted Travel Crash Rate	
Total Travel (million veh-mi)	**3.20**
Travel Crash Rate (crashes/million veh-mi)	**0.66**
Travel FI Crash Rate (crashes/million veh-mi)	**0.20**
Travel PDO Crash Rate (crashes/million veh-mi)	**0.46**

Note: *Total Travel and Crash Rates/Million Vehicle Miles* for *Speed Change Lanes* reflect AADTs that are **half of the Freeway Segment AADTs** based on the assumption of 50/50 directional distribution.

Table 5. Predicted Crash Frequencies and Rates by Freeway Segment/Intersection (Section 1)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Effective Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	5+28.000	0.0621	0.456	0.4562	0.1474	0.3089	7.3445	0.55
3	5+28.000	6+00.000	0.0136	0.096	0.0958	0.0309	0.0650	7.0284	0.53
4	6+00.000	10+00.000	0.0379	0.276	0.2760	0.0890	0.1870	7.2858	0.55
6	10+00.000	18+82.000	0.1670	0.956	0.9558	0.3191	0.6367	5.7220	0.48
7	18+82.000	22+50.000	0.0697	0.387	0.3868	0.1308	0.2560	5.5498	0.47
8	22+50.000	23+24.000	0.0140	0.097	0.0972	0.0316	0.0656	6.9359	0.48
9	23+24.000	28+38.000	0.0973	0.720	0.7203	0.2274	0.4929	7.3996	0.51
10	28+38.000	31+44.000	0.0580	0.409	0.4089	0.1320	0.2769	7.0551	0.49
11	31+44.000	32+73.600	0.0245	0.191	0.1911	0.0590	0.1320	7.7839	0.54
12	32+73.600	36+96.000	0.0421	0.334	0.3336	0.1057	0.2279	7.9191	0.55
14	36+96.000	71+81.000	0.6222	4.750	4.7500	1.4935	3.2564	7.6347	0.53
16	71+81.000	72+34.000	0.0100	0.078	0.0781	0.0241	0.0540	7.7839	0.54
17	72+34.000	75+98.000	0.0689	0.503	0.5029	0.1600	0.3429	7.2952	0.50
18	75+98.000	77+36.000	0.0261	0.191	0.1907	0.0607	0.1300	7.2952	0.50
19	77+36.000	81+45.000	0.0775	0.565	0.5651	0.1798	0.3853	7.2952	0.50
20	81+45.000	81+83.000	0.0072	0.056	0.0560	0.0173	0.0387	7.7839	0.54
21	81+83.000	100+10.000	0.3460	2.560	2.5604	0.8084	1.7520	7.3996	0.51
22	100+10.000	100+45.000	0.0066	0.052	0.0516	0.0159	0.0357	7.7839	0.54
23	100+45.000	103+95.000	0.0663	0.484	0.4836	0.1539	0.3297	7.2952	0.50
24	103+95.000	104+73.000	0.0148	0.121	0.1206	0.0365	0.0841	8.1630	0.56
25	104+73.000	105+21.000	0.0091	0.074	0.0742	0.0224	0.0518	8.1630	0.56
26	105+21.000	105+31.000	0.0019	0.015	0.0155	0.0047	0.0108	8.1630	0.56
27	105+31.000	108+56.000	0.0616	0.502	0.5025	0.1519	0.3505	8.1630	0.56
28	108+56.000	108+91.000	0.0066	0.054	0.0541	0.0164	0.0377	8.1630	0.56
29	108+91.000	112+96.000	0.0767	0.625	0.6250	0.1891	0.4358	8.1481	0.56
30	112+96.000	113+31.000	0.0066	0.048	0.0484	0.0154	0.0330	7.2952	0.50
31	113+31.000	117+78.000	0.0847	0.618	0.6176	0.1965	0.4211	7.2952	0.50
32	117+78.000	118+40.000	0.0117	0.076	0.0762	0.0255	0.0507	6.4877	0.45
33	118+40.000	131+13.000	0.2411	1.784	1.7840	0.5633	1.2207	7.3996	0.51
34	131+13.000	135+55.000	0.0837	0.611	0.6107	0.1943	0.4164	7.2952	0.50
35	135+55.000	136+92.000	0.0259	0.212	0.2118	0.0640	0.1478	8.1630	0.56
36	136+92.000	140+50.000	0.0678	0.495	0.4946	0.1574	0.3372	7.2952	0.50
37	140+50.000	141+82.000	0.0250	0.195	0.1946	0.0601	0.1345	7.7839	0.54
38	141+82.000	183+90.000	0.7970	5.957	5.9571	1.8730	4.0841	7.4747	0.52
39	183+90.000	184+40.000	0.0095	0.074	0.0737	0.0228	0.0509	7.7839	0.54
40	184+40.000	188+04.000	0.0689	0.503	0.5029	0.1600	0.3429	7.2952	0.50
41	188+04.000	189+68.000	0.0311	0.254	0.2535	0.0767	0.1769	8.1630	0.56
42	189+68.000	193+20.000	0.0667	0.486	0.4863	0.1548	0.3316	7.2952	0.50
43	193+20.000	193+84.000	0.0121	0.094	0.0944	0.0292	0.0652	7.7839	0.54
44	193+84.000	210+97.000	0.3244	2.401	2.4007	0.7580	1.6427	7.3996	0.51
45	210+97.000	240+00.000	0.5119	3.428	3.4275	1.1481	2.2794	6.6952	0.46
47	240+00.000	255+00.000	0.2841	1.832	1.8319	0.6146	1.2173	6.4483	0.45
48	255+00.000	270+00.000	0.2462	1.623	1.6234	0.5450	1.0783	6.5933	0.46
Total			4.8864	35.241	35.2413	11.2663	23.9751	7.2122	0.50

Note: *Effective Length* is the *segment length* minus the length of the *speed change lanes* if present. This may create Freeway segments with zero effective length and zero crashes.

Table 6. Predicted Crash Frequencies and Rates by Freeway Speed Change Lane (Speed Change)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
2	1+28.000	5+28.000	0.0758	0.359	0.3586	0.1047	0.2539	4.7331	0.71
5	6+00.000	10+00.000	0.0758	0.295	0.2954	0.0912	0.2042	3.8989	0.58
13	32+73.600	36+73.600	0.0758	0.373	0.3729	0.1136	0.2593	4.9229	0.68
15	36+96.000	40+96.000	0.0758	0.409	0.4088	0.1275	0.2813	5.3959	0.74
46	236+00.000	240+00.000	0.0758	0.320	0.3201	0.0985	0.2215	4.2251	0.58
49	255+00.000	259+00.000	0.0758	0.355	0.3552	0.1176	0.2376	4.6887	0.65
50	269+99.997	270+00.000	0.0000	0.000	0.0000	0.0000	0.0000	8.9223	1.24
Total			0.4545	2.111	2.1110	0.6532	1.4578	4.6441	0.66

Note: *Travel Crash Rates/Million Vehicle Miles* for *Speed Change Lanes* reflect AADTs that are **half of the Freeway Segment AADTs** based on the assumption of 50/50 directional distribution.

Table 7. Predicted Crash Frequencies and Rates by Horizontal Design Element (Section 1)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
Tangent	0.000	220+00.000	4.1667	30.860	30.8604	9.7527	21.1077	7.4065	0.56
Simple Curve 1	220+00.000	260+00.000	0.7576	5.410	5.4096	1.8034	3.6062	7.1407	0.58
Tangent	260+00.000	270+00.000	0.1894	1.082	1.0822	0.3633	0.7189	5.7142	0.46

Table 8. Predicted Crash Frequencies by Year (Section 1)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2045	37.35	11.92	31.911	25.43	68.089
Total	37.35	11.92	31.911	25.43	68.089
Average	37.35	11.92	31.911	25.43	68.089

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 9. Predicted Crash Severity by Freeway Segment (Section 1)

Seg. No.	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)
1	0.0040	0.0096	0.0537	0.0801	0.3089
3	0.0008	0.0020	0.0112	0.0168	0.0650
4	0.0024	0.0058	0.0324	0.0484	0.1870
6	0.0088	0.0212	0.1179	0.1712	0.6367
7	0.0038	0.0089	0.0492	0.0689	0.2560
8	0.0009	0.0022	0.0119	0.0167	0.0656
9	0.0061	0.0148	0.0829	0.1237	0.4929
10	0.0037	0.0089	0.0491	0.0703	0.2769
11	0.0015	0.0036	0.0208	0.0331	0.1320
12	0.0028	0.0069	0.0385	0.0575	0.2279
14	0.0395	0.0956	0.5394	0.8190	3.2564
16	0.0006	0.0015	0.0085	0.0135	0.0540
17	0.0043	0.0104	0.0583	0.0870	0.3429
18	0.0016	0.0039	0.0221	0.0330	0.1300
19	0.0048	0.0117	0.0655	0.0978	0.3853
20	0.0004	0.0011	0.0061	0.0097	0.0387
21	0.0218	0.0525	0.2945	0.4396	1.7520
22	0.0004	0.0010	0.0056	0.0089	0.0357
23	0.0041	0.0100	0.0561	0.0837	0.3297
24	0.0009	0.0021	0.0124	0.0210	0.0841
25	0.0005	0.0013	0.0077	0.0129	0.0518
26	0.0001	0.0003	0.0016	0.0027	0.0108
27	0.0036	0.0089	0.0518	0.0876	0.3505
28	0.0004	0.0010	0.0056	0.0094	0.0377
29	0.0045	0.0111	0.0646	0.1090	0.4358
30	0.0004	0.0010	0.0056	0.0084	0.0330
31	0.0053	0.0128	0.0716	0.1069	0.4211
32	0.0008	0.0018	0.0099	0.0130	0.0507
33	0.0152	0.0366	0.2052	0.3063	1.2207
34	0.0052	0.0126	0.0708	0.1057	0.4164
35	0.0015	0.0037	0.0218	0.0369	0.1478
36	0.0042	0.0102	0.0573	0.0856	0.3372
37	0.0015	0.0037	0.0212	0.0337	0.1345
38	0.0498	0.1204	0.6781	1.0246	4.0841
39	0.0006	0.0014	0.0080	0.0128	0.0509
40	0.0043	0.0104	0.0583	0.0870	0.3429
41	0.0018	0.0045	0.0261	0.0442	0.1769
42	0.0042	0.0100	0.0564	0.0842	0.3316
43	0.0007	0.0018	0.0103	0.0163	0.0652
44	0.0204	0.0492	0.2761	0.4122	1.6427
45	0.0385	0.0919	0.4611	0.5567	2.2794
47	0.0215	0.0520	0.2511	0.2901	1.2173
48	0.0172	0.0406	0.2139	0.2733	1.0783
Total	0.3157	0.7607	4.1703	6.0196	23.9751

Table 10. Predicted Crash Severity by Speed Change Lane (Speed Change)

Seg. No.	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)
2	0.0028	0.0068	0.0381	0.0569	0.2539
5	0.0028	0.0065	0.0353	0.0465	0.2042
13	0.0029	0.0071	0.0403	0.0633	0.2593
15	0.0034	0.0083	0.0464	0.0693	0.2813
46	0.0034	0.0083	0.0403	0.0465	0.2215
49	0.0041	0.0099	0.0480	0.0555	0.2376
50	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0195	0.0470	0.2485	0.3382	1.4578

Table 11. Predicted Freeway 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	0.08	0.2	1.06	3.0	1.14	3.2
Highway Segment	Collision with Fixed Object	4.29	12.2	10.20	28.9	14.49	41.1
Highway Segment	Collision with Other Object	0.23	0.7	2.04	5.8	2.27	6.5
Highway Segment	Other Single-vehicle Collision	2.79	7.9	2.64	7.5	5.43	15.4
Highway Segment	Collision with Parked Vehicle	0.18	0.5	0.38	1.1	0.56	1.6
Highway Segment	Total Single Vehicle Crashes	7.57	21.5	16.32	46.3	23.89	67.8
Highway Segment	Right-Angle Collision	0.21	0.6	0.23	0.7	0.44	1.2
Highway Segment	Head-on Collision	0.07	0.2	0.03	0.1	0.10	0.3
Highway Segment	Other Multi-vehicle Collision	0.22	0.6	0.60	1.7	0.81	2.3
Highway Segment	Rear-end Collision	2.33	6.6	3.89	11.0	6.22	17.6
Highway Segment	Sideswipe, Same Direction Collision	0.88	2.5	2.91	8.3	3.79	10.7
Highway Segment	Total Multiple Vehicle Crashes	3.69	10.5	7.66	21.7	11.35	32.2
Highway Segment	Total Highway Segment Crashes	11.27	32.0	23.98	68.0	35.24	100.0
	Total Crashes	11.27	32.0	23.98	68.0	35.24	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 12. Predicted Exit Speed Change Lane Crash Type Distribution (Speed Change)

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	0.04	4.2	0.04	4.2
Highway Segment	Collision with Fixed Object	0.07	6.9	0.16	16.3	0.23	23.2
Highway Segment	Collision with Other Object	0.01	0.9	0.04	4.2	0.05	5.1
Highway Segment	Other Single-vehicle Collision	0.05	5.0	0.05	4.9	0.10	9.9
Highway Segment	Collision with Parked Vehicle	0.00	0.0	0.01	1.2	0.01	1.2
Highway Segment	Total Single Vehicle Crashes	0.13	12.8	0.30	30.8	0.43	43.6
Highway Segment	Right-Angle Collision	0.01	0.5	0.00	0.0	0.01	0.5
Highway Segment	Head-on Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Other Multi-vehicle Collision	0.00	0.0	0.01	0.6	0.01	0.6
Highway Segment	Rear-end Collision	0.14	14.2	0.21	21.1	0.35	35.3
Highway Segment	Sideswipe, Same Direction Collision	0.03	3.2	0.17	16.8	0.20	20.0
Highway Segment	Total Multiple Vehicle Crashes	0.18	17.9	0.38	38.5	0.56	56.4
Highway Segment	Total Highway Segment Crashes	0.30	30.7	0.69	69.3	0.99	100.0
	Total Crashes	0.30	30.7	0.69	69.3	0.99	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. Predicted Entrance Speed Change Lane Crash Type Distribution (Speed Change)

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	0.01	0.6	0.01	0.6
Highway Segment	Collision with Fixed Object	0.09	7.6	0.23	20.4	0.31	28.0
Highway Segment	Collision with Other Object	0.01	0.7	0.05	4.8	0.06	5.5
Highway Segment	Other Single-vehicle Collision	0.06	5.3	0.05	4.5	0.11	9.8
Highway Segment	Collision with Parked Vehicle	0.01	0.7	0.00	0.0	0.01	0.7
Highway Segment	Total Single Vehicle Crashes	0.16	14.2	0.34	30.4	0.50	44.6
Highway Segment	Right-Angle Collision	0.01	1.0	0.01	0.9	0.02	1.9
Highway Segment	Head-on Collision	0.01	0.7	0.00	0.3	0.01	0.9
Highway Segment	Other Multi-vehicle Collision	0.00	0.3	0.03	2.8	0.04	3.1
Highway Segment	Rear-end Collision	0.12	10.9	0.20	17.9	0.32	28.8
Highway Segment	Sideswipe, Same Direction Collision	0.04	4.0	0.19	16.7	0.23	20.6
Highway Segment	Total Multiple Vehicle Crashes	0.19	16.9	0.43	38.5	0.62	55.4
Highway Segment	Total Highway Segment Crashes	0.35	31.2	0.77	68.8	1.12	100.0
	Total Crashes	0.35	31.2	0.77	68.8	1.12	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

(2045 - Proposed Action Network)

August 12, 2021

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Report Overview

Report Generated: Aug 12, 2021 3:53 PM
Report Template: System: Multi-Page, 508 Compliant [System] (mlcpm4, Aug 11, 2021 9:24 AM)

Evaluation Date: Thu Aug 12 15:49:57 MDT 2021
IHSDM Version: v16.0.0 (Sep 30, 2020)
Crash Prediction Module: v11.0.0 (Sep 30, 2020)

User Name: hamideh.etemadnia
Organization Name:
Phone:
E-Mail:

Project Title: Purcell - 2045 - Alternative 3
Project Comment: Created using wizard
Project Unit System: U.S. Customary

Highway Title: I-35
Highway Comment: Created using wizard
Highway Version: 2

Evaluation Title: Evaluation 5
Evaluation Comment: Created Thu Aug 12 15:49:25 MDT 2021

Minimum Location: 0.000
Maximum Location: 270+00.000
Policy for Superelevation: AASHTO 2011 U.S. Customary
Calibration: HSM Configuration
Crash Distribution: HSM Configuration
Model/CMF: HSM Configuration
First Year of Analysis: 2045
Last Year of Analysis: 2045
Empirical-Bayes Analysis: None
First Year of Observed Crashes:
Last Year of Observed Crashes:

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 AND 17-58

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.

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 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: 0.000
Evaluation End Location: 270+00.000
Functional Class: Freeway
Type of Alignment: Divided, Multilane
Model Category: Freeway Segment
Calibration Factor: FI_EN=1.0; FI_EX=1.0; FI_MV=1.0; FI_SV=1.0; PDO_EN=1.0; PDO_EX=1.0; PDO_MV=1.0; PDO_SV=1.0;

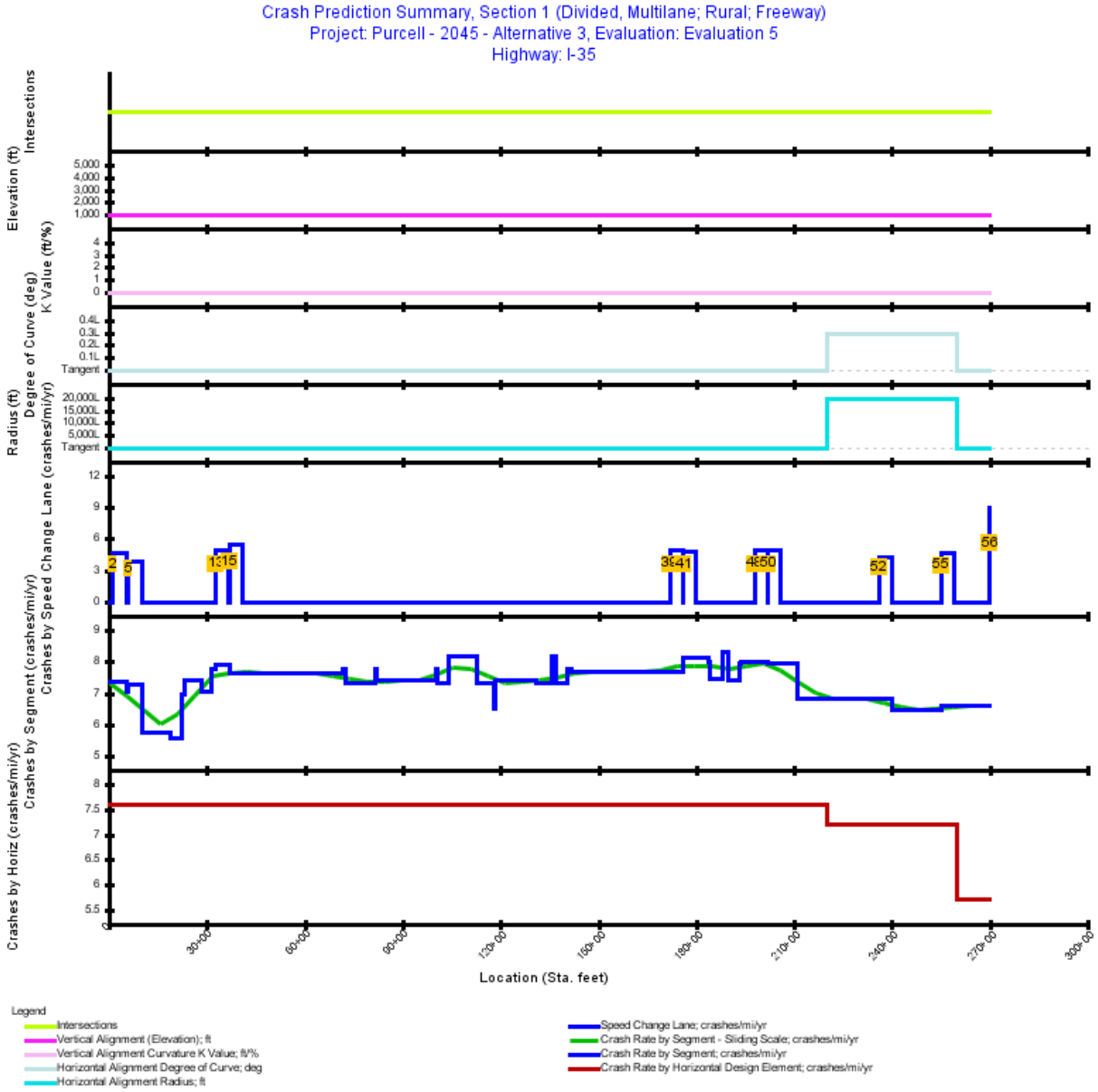

Figure 1. Crash Prediction Summary (Section 1)

Table 1. Evaluation Freeway - Homogeneous Segments (Section 1)

Seg. No.	Type	Area Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Median Width (ft)	Type	Effective Median Width (ft)
1	Four-lane Freeway	Rural	0.000	5+28.000	528.00	0.1000	2045: 36,496	30.00	Non-Traversable Median	38.00
3	Four-lane Freeway	Rural	5+28.000	6+00.000	72.00	0.0136	2045: 36,496	30.00	Non-Traversable Median	38.00
4	Four-lane Freeway	Rural	6+00.000	10+00.000	400.00	0.0758	2045: 36,496	30.00	Non-Traversable Median	38.00
6	Four-lane Freeway	Rural	10+00.000	18+82.000	882.00	0.1670	2045: 32,411	30.00	Non-Traversable Median	38.00
7	Four-lane Freeway	Rural	18+82.000	22+50.000	368.00	0.0697	2045: 32,411	30.00	Non-Traversable Median	38.00
8	Four-lane Freeway	Rural	22+50.000	23+24.000	74.00	0.0140	2045: 39,713	30.00	Non-Traversable Median	38.00
9	Four-lane Freeway	Rural	23+24.000	28+38.000	514.00	0.0973	2045: 39,713	30.00	Non-Traversable Median	38.00
10	Four-lane Freeway	Rural	28+38.000	31+44.000	306.00	0.0580	2045: 39,713	30.00	Non-Traversable Median	38.00
11	Four-lane Freeway	Rural	31+44.000	32+73.600	129.60	0.0245	2045: 39,713	30.00	Non-Traversable Median	38.00
12	Four-lane Freeway	Rural	32+73.600	36+96.000	422.40	0.0800	2045: 39,713	30.00	Non-Traversable Median	38.00
14	Four-lane Freeway	Rural	36+96.000	71+81.000	3,485.00	0.6600	2045: 39,713	30.00	Non-Traversable Median	38.00
16	Four-lane Freeway	Rural	71+81.000	72+34.000	53.00	0.0100	2045: 39,713	30.00	Non-Traversable Median	38.00
17	Four-lane Freeway	Rural	72+34.000	75+98.000	364.00	0.0689	2045: 39,713	30.00	Non-Traversable Median	38.00
18	Four-lane Freeway	Rural	75+98.000	77+36.000	138.00	0.0261	2045: 39,713	30.00	Non-Traversable Median	38.00
19	Four-lane Freeway	Rural	77+36.000	81+45.000	409.00	0.0775	2045: 39,713	30.00	Non-Traversable Median	38.00
20	Four-lane Freeway	Rural	81+45.000	81+83.000	38.00	0.0072	2045: 39,713	30.00	Non-Traversable Median	38.00
21	Four-lane Freeway	Rural	81+83.000	100+10.000	1,827.00	0.3460	2045: 39,713	30.00	Non-Traversable Median	38.00
22	Four-lane Freeway	Rural	100+10.000	100+45.000	35.00	0.0066	2045: 39,713	30.00	Non-Traversable Median	38.00
23	Four-lane Freeway	Rural	100+45.000	103+95.000	350.00	0.0663	2045: 39,713	30.00	Non-Traversable Median	38.00
24	Four-lane Freeway	Rural	103+95.000	104+73.000	78.00	0.0148	2045: 39,713	30.00	Non-Traversable Median	38.00
25	Four-lane Freeway	Rural	104+73.000	105+21.000	48.00	0.0091	2045: 39,713	30.00	Non-Traversable Median	38.00
26	Four-lane Freeway	Rural	105+21.000	105+31.000	10.00	0.0019	2045: 39,713	30.00	Non-Traversable Median	38.00
27	Four-lane Freeway	Rural	105+31.000	108+56.000	325.00	0.0616	2045: 39,713	30.00	Non-Traversable Median	38.00
28	Four-lane Freeway	Rural	108+56.000	108+91.000	35.00	0.0066	2045: 39,713	30.00	Non-Traversable Median	38.00
29	Four-lane Freeway	Rural	108+91.000	112+96.000	405.00	0.0767	2045: 39,713	30.00	Non-Traversable Median	38.00

Seg. No.	Type	Area Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Median Width (ft)	Type	Effective Median Width (ft)
30	Four-lane Freeway	Rural	112+96.000	113+31.000	35.00	0.0066	2045: 39,713	30.00	Non-Traversable Median	38.00
31	Four-lane Freeway	Rural	113+31.000	117+78.000	447.00	0.0847	2045: 39,713	30.00	Non-Traversable Median	38.00
32	Four-lane Freeway	Rural	117+78.000	118+40.000	62.00	0.0117	2045: 39,713	30.00	Non-Traversable Median	38.00
33	Four-lane Freeway	Rural	118+40.000	131+13.000	1,273.00	0.2411	2045: 39,713	30.00	Non-Traversable Median	38.00
34	Four-lane Freeway	Rural	131+13.000	135+55.000	442.00	0.0837	2045: 39,713	30.00	Non-Traversable Median	38.00
35	Four-lane Freeway	Rural	135+55.000	136+92.000	137.00	0.0259	2045: 39,713	30.00	Non-Traversable Median	38.00
36	Four-lane Freeway	Rural	136+92.000	140+50.000	358.00	0.0678	2045: 39,713	30.00	Non-Traversable Median	38.00
37	Four-lane Freeway	Rural	140+50.000	141+82.000	132.00	0.0250	2045: 39,713	30.00	Non-Traversable Median	38.00
38	Four-lane Freeway	Rural	141+82.000	176+00.000	3,418.00	0.6473	2045: 39,713	30.00	Non-Traversable Median	38.00
40	Four-lane Freeway	Rural	176+00.000	183+90.000	790.00	0.1496	2045: 39,713	30.00	Non-Traversable Median	38.00
42	Four-lane Freeway	Rural	183+90.000	184+40.000	50.00	0.0095	2045: 39,713	30.00	Non-Traversable Median	38.00
43	Four-lane Freeway	Rural	184+40.000	188+04.000	364.00	0.0689	2045: 39,713	30.00	Non-Traversable Median	38.00
44	Four-lane Freeway	Rural	188+04.000	189+68.000	164.00	0.0311	2045: 39,713	30.00	Non-Traversable Median	38.00
45	Four-lane Freeway	Rural	189+68.000	193+20.000	352.00	0.0667	2045: 39,713	30.00	Non-Traversable Median	38.00
46	Four-lane Freeway	Rural	193+20.000	193+84.000	64.00	0.0121	2045: 39,713	30.00	Non-Traversable Median	38.00
47	Four-lane Freeway	Rural	193+84.000	202+00.000	816.00	0.1545	2045: 39,713	30.00	Non-Traversable Median	38.00
49	Four-lane Freeway	Rural	202+00.000	210+97.000	897.00	0.1699	2045: 39,713	30.00	Non-Traversable Median	38.00
51	Four-lane Freeway	Rural	210+97.000	240+00.000	2,903.00	0.5498	2045: 39,713	30.00	Non-Traversable Median	38.00
53	Four-lane Freeway	Rural	240+00.000	255+00.000	1,500.00	0.2841	2045: 39,340	30.00	Non-Traversable Median	38.00
54	Four-lane Freeway	Rural	255+00.000	270+00.000	1,500.00	0.2841	2045: 39,340	30.00	Non-Traversable Median	38.00

Table 2. Evaluation Freeway - Speed Change Lanes (Speed Change)

Seg. No.	Type	Ramp Type	Start Location (Sta. ft)	End Location (Sta. ft)	Length (ft)	Length (mi)	AADT	Median Width (ft)	Type	Effective Median Width (ft)
2	Four-lane Freeway Speed Change	Entrance	1+28.000	5+28.000	400.00	0.0758	2045: 36,496	30.00	Non-Traversable Median	38.00
5	Four-lane Freeway Speed Change	Exit	6+00.000	10+00.000	400.00	0.0758	2045: 36,496	30.00	Non-Traversable Median	38.00
13	Four-lane Freeway Speed Change	Exit	32+73.600	36+73.600	400.00	0.0758	2045: 39,713	30.00	Non-Traversable Median	38.00
15	Four-lane Freeway Speed Change	Entrance	36+96.000	40+96.000	400.00	0.0758	2045: 39,713	30.00	Non-Traversable Median	38.00
39	Four-lane Freeway Speed Change	Exit	172+00.000	176+00.000	400.00	0.0758	2045: 39,713	30.00	Non-Traversable Median	38.00
41	Four-lane Freeway Speed Change	Entrance	176+00.000	180+00.000	400.00	0.0758	2045: 39,713	30.00	Non-Traversable Median	38.00
48	Four-lane Freeway Speed Change	Exit	198+00.000	202+00.000	400.00	0.0758	2045: 39,713	30.00	Non-Traversable Median	38.00
50	Four-lane Freeway Speed Change	Entrance	202+00.000	206+00.000	400.00	0.0758	2045: 39,713	30.00	Non-Traversable Median	38.00
52	Four-lane Freeway Speed Change	Exit	236+00.000	240+00.000	400.00	0.0758	2045: 39,713	30.00	Non-Traversable Median	38.00
55	Four-lane Freeway Speed Change	Entrance	255+00.000	259+00.000	400.00	0.0758	2045: 39,340	30.00	Non-Traversable Median	38.00
56	Four-lane Freeway Speed Change	Exit	269+99.997	270+00.000	0.00	0.0000	2045: 39,340	30.00	Non-Traversable Median	38.00

Table 3. Predicted Freeway Crash Rates and Frequencies Summary (Section 1)

First Year of Analysis	**2045**
Last Year of Analysis	**2045**
Effective Length (mi)	**4.7348**
Average Future Road AADT (vpd)	**39,229**
Predicted Crashes	
Total Crashes	**34.55**
Fatal and Injury Crashes	**11.06**
Property-Damage-Only Crashes	**23.49**
Percent of Total Predicted Crashes	
Percent Fatal and Injury Crashes (%)	**32**
Percent Property-Damage-Only Crashes (%)	**68**
Predicted Crash Rate	
Crash Rate (crashes/mi/yr)	**7.2972**
FI Crash Rate (crashes/mi/yr)	**2.3353**
PDO Crash Rate (crashes/mi/yr)	**4.9619**
Predicted Travel Crash Rate	
Total Travel (million veh-mi)	**67.80**
Travel Crash Rate (crashes/million veh-mi)	**0.51**
Travel FI Crash Rate (crashes/million veh-mi)	**0.16**
Travel PDO Crash Rate (crashes/million veh-mi)	**0.35**

Note: *Effective Length* is the *segment length* minus the length of the *speed change lanes* if present.

Table 4. Predicted Freeway Speed Change Lane Crash Rates and Frequencies Summary (Speed Change)

First Year of Analysis	**2045**
Last Year of Analysis	**2045**
Length (mi)	**0.7576**
Average Future Road AADT (vpd)	**19,516**
Predicted Crashes	
Total Crashes	**3.59**
Fatal and Injury Crashes	**1.05**
Property-Damage-Only Crashes	**2.54**
Percent of Total Predicted Crashes	
Percent Fatal and Injury Crashes (%)	**29**
Percent Property-Damage-Only Crashes (%)	**71**
Predicted Crash Rate	
Crash Rate (crashes/mi/yr)	**4.7339**
FI Crash Rate (crashes/mi/yr)	**1.3825**
PDO Crash Rate (crashes/mi/yr)	**3.3514**
Predicted Travel Crash Rate	
Total Travel (million veh-mi)	**5.40**
Travel Crash Rate (crashes/million veh-mi)	**0.67**
Travel FI Crash Rate (crashes/million veh-mi)	**0.19**
Travel PDO Crash Rate (crashes/million veh-mi)	**0.47**

Note: *Total Travel and Crash Rates/Million Vehicle Miles* for *Speed Change Lanes* reflect AADTs that are **half of the Freeway Segment AADTs** based on the assumption of 50/50 directional distribution.

Table 5. Predicted Crash Frequencies and Rates by Freeway Segment/Intersection (Section 1)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Effective Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
1	0.000	5+28.000	0.0621	0.458	0.4578	0.1479	0.3099	7.3687	0.55
3	5+28.000	6+00.000	0.0136	0.096	0.0958	0.0309	0.0650	7.0284	0.53
4	6+00.000	10+00.000	0.0379	0.276	0.2760	0.0890	0.1870	7.2858	0.55
6	10+00.000	18+82.000	0.1670	0.956	0.9558	0.3191	0.6367	5.7220	0.48
7	18+82.000	22+50.000	0.0697	0.387	0.3868	0.1308	0.2560	5.5498	0.47
8	22+50.000	23+24.000	0.0140	0.097	0.0972	0.0316	0.0656	6.9359	0.48
9	23+24.000	28+38.000	0.0973	0.720	0.7203	0.2274	0.4929	7.3996	0.51
10	28+38.000	31+44.000	0.0580	0.409	0.4089	0.1320	0.2769	7.0551	0.49
11	31+44.000	32+73.600	0.0245	0.191	0.1911	0.0590	0.1320	7.7839	0.54
12	32+73.600	36+96.000	0.0421	0.334	0.3336	0.1057	0.2279	7.9191	0.55
14	36+96.000	71+81.000	0.6222	4.750	4.7500	1.4935	3.2564	7.6347	0.53
16	71+81.000	72+34.000	0.0100	0.078	0.0781	0.0241	0.0540	7.7839	0.54
17	72+34.000	75+98.000	0.0689	0.503	0.5029	0.1600	0.3429	7.2952	0.50
18	75+98.000	77+36.000	0.0261	0.191	0.1907	0.0607	0.1300	7.2952	0.50
19	77+36.000	81+45.000	0.0775	0.565	0.5651	0.1798	0.3853	7.2952	0.50
20	81+45.000	81+83.000	0.0072	0.056	0.0560	0.0173	0.0387	7.7839	0.54
21	81+83.000	100+10.000	0.3460	2.560	2.5604	0.8084	1.7520	7.3996	0.51
22	100+10.000	100+45.000	0.0066	0.052	0.0516	0.0159	0.0357	7.7839	0.54
23	100+45.000	103+95.000	0.0663	0.484	0.4836	0.1539	0.3297	7.2952	0.50
24	103+95.000	104+73.000	0.0148	0.121	0.1206	0.0365	0.0841	8.1630	0.56
25	104+73.000	105+21.000	0.0091	0.074	0.0742	0.0224	0.0518	8.1630	0.56
26	105+21.000	105+31.000	0.0019	0.015	0.0155	0.0047	0.0108	8.1630	0.56
27	105+31.000	108+56.000	0.0616	0.502	0.5025	0.1519	0.3505	8.1630	0.56
28	108+56.000	108+91.000	0.0066	0.054	0.0541	0.0164	0.0377	8.1630	0.56
29	108+91.000	112+96.000	0.0767	0.625	0.6250	0.1891	0.4358	8.1481	0.56
30	112+96.000	113+31.000	0.0066	0.048	0.0484	0.0154	0.0330	7.2952	0.50
31	113+31.000	117+78.000	0.0847	0.618	0.6176	0.1965	0.4211	7.2952	0.50
32	117+78.000	118+40.000	0.0117	0.076	0.0762	0.0255	0.0507	6.4877	0.45
33	118+40.000	131+13.000	0.2411	1.784	1.7840	0.5633	1.2207	7.3996	0.51
34	131+13.000	135+55.000	0.0837	0.611	0.6107	0.1943	0.4164	7.2952	0.50
35	135+55.000	136+92.000	0.0259	0.212	0.2118	0.0640	0.1478	8.1630	0.56
36	136+92.000	140+50.000	0.0678	0.495	0.4946	0.1574	0.3372	7.2952	0.50
37	140+50.000	141+82.000	0.0250	0.195	0.1946	0.0601	0.1345	7.7839	0.54
38	141+82.000	176+00.000	0.6095	4.691	4.6907	1.4755	3.2153	7.6964	0.53
40	176+00.000	183+90.000	0.1117	0.906	0.9056	0.2872	0.6184	8.1040	0.56
42	183+90.000	184+40.000	0.0095	0.076	0.0759	0.0235	0.0523	8.0108	0.55
43	184+40.000	188+04.000	0.0689	0.513	0.5131	0.1637	0.3493	7.4422	0.51
44	188+04.000	189+68.000	0.0311	0.257	0.2572	0.0780	0.1792	8.2810	0.57
45	189+68.000	193+20.000	0.0667	0.495	0.4947	0.1579	0.3369	7.4210	0.51
46	193+20.000	193+84.000	0.0121	0.097	0.0966	0.0299	0.0666	7.9659	0.55
47	193+84.000	202+00.000	0.1167	0.930	0.9301	0.2949	0.6352	7.9724	0.55
49	202+00.000	210+97.000	0.1320	1.046	1.0460	0.3315	0.7145	7.9240	0.55
51	210+97.000	240+00.000	0.5119	3.493	3.4930	1.1702	2.3228	6.8231	0.47
53	240+00.000	255+00.000	0.2841	1.832	1.8319	0.6146	1.2173	6.4483	0.45
54	255+00.000	270+00.000	0.2462	1.625	1.6251	0.5456	1.0795	6.6005	0.46
Total			4.7348	34.551	34.5513	11.0573	23.4940	7.2972	0.51

Note: *Effective Length* is the *segment length* minus the length of the *speed change lanes* if present. This may create Freeway segments with zero effective length and zero crashes.

Table 6. Predicted Crash Frequencies and Rates by Freeway Speed Change Lane (Speed Change)

Segment Number/Intersection Name/Cross Road	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
2	1+28.000	5+28.000	0.0758	0.355	0.3548	0.1010	0.2539	4.6838	0.70
5	6+00.000	10+00.000	0.0758	0.295	0.2954	0.0912	0.2042	3.8989	0.58
13	32+73.600	36+73.600	0.0758	0.373	0.3729	0.1136	0.2593	4.9229	0.68
15	36+96.000	40+96.000	0.0758	0.409	0.4088	0.1275	0.2813	5.3959	0.74
39	172+00.000	176+00.000	0.0758	0.373	0.3729	0.1136	0.2593	4.9229	0.68
41	176+00.000	180+00.000	0.0758	0.362	0.3624	0.0812	0.2813	4.7843	0.66
48	198+00.000	202+00.000	0.0758	0.373	0.3729	0.1136	0.2593	4.9229	0.68
50	202+00.000	206+00.000	0.0758	0.374	0.3742	0.0929	0.2813	4.9396	0.68
52	236+00.000	240+00.000	0.0758	0.320	0.3201	0.0985	0.2215	4.2251	0.58
55	255+00.000	259+00.000	0.0758	0.352	0.3517	0.1142	0.2376	4.6430	0.65
56	269+99.997	270+00.000	0.0000	0.000	0.0000	0.0000	0.0000	8.9223	1.24
Total			0.7576	3.586	3.5863	1.0474	2.5390	4.7339	0.67

Note: *Travel Crash Rates/Million Vehicle Miles* for *Speed Change Lanes* reflect AADTs that are **half of the Freeway Segment AADTs** based on the assumption of 50/50 directional distribution.

Table 7. Predicted Crash Frequencies and Rates by Horizontal Design Element (Section 1)

Title	Start Location (Sta. ft)	End Location (Sta. ft)	Length (mi)	Total Predicted Crashes for Evaluation Period	Predicted Total Crash Frequency (crashes/yr)	Predicted FI Crash Frequency (crashes/yr)	Predicted PDO Crash Frequency (crashes/yr)	Predicted Crash Rate (crashes/mi/yr)	Predicted Travel Crash Rate (crashes/million veh-mi)
Tangent	0.000	220+00.000	4.1667	31.602	31.6023	9.9255	21.6768	7.5846	0.62
Simple Curve 1	220+00.000	260+00.000	0.7576	5.452	5.4519	1.8154	3.6365	7.1965	0.58
Tangent	260+00.000	270+00.000	0.1894	1.083	1.0834	0.3637	0.7197	5.7205	0.46

Table 8. Predicted Crash Frequencies by Year (Section 1)

Year	Total Crashes	FI Crashes	Percent FI (%)	PDO Crashes	Percent PDO (%)
2045	38.14	12.11	31.739	26.03	68.261
Total	38.14	12.11	31.739	26.03	68.261
Average	38.14	12.11	31.739	26.03	68.261

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 9. Predicted Crash Severity by Freeway Segment (Section 1)

Seg. No.	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)
1	0.0040	0.0096	0.0539	0.0804	0.3099
3	0.0008	0.0020	0.0112	0.0168	0.0650
4	0.0024	0.0058	0.0324	0.0484	0.1870
6	0.0088	0.0212	0.1179	0.1712	0.6367
7	0.0038	0.0089	0.0492	0.0689	0.2560
8	0.0009	0.0022	0.0119	0.0167	0.0656
9	0.0061	0.0148	0.0829	0.1237	0.4929
10	0.0037	0.0089	0.0491	0.0703	0.2769
11	0.0015	0.0036	0.0208	0.0331	0.1320
12	0.0028	0.0069	0.0385	0.0575	0.2279
14	0.0395	0.0956	0.5394	0.8190	3.2564
16	0.0006	0.0015	0.0085	0.0135	0.0540
17	0.0043	0.0104	0.0583	0.0870	0.3429
18	0.0016	0.0039	0.0221	0.0330	0.1300
19	0.0048	0.0117	0.0655	0.0978	0.3853
20	0.0004	0.0011	0.0061	0.0097	0.0387
21	0.0218	0.0525	0.2945	0.4396	1.7520
22	0.0004	0.0010	0.0056	0.0089	0.0357
23	0.0041	0.0100	0.0561	0.0837	0.3297
24	0.0009	0.0021	0.0124	0.0210	0.0841
25	0.0005	0.0013	0.0077	0.0129	0.0518
26	0.0001	0.0003	0.0016	0.0027	0.0108
27	0.0036	0.0089	0.0518	0.0876	0.3505
28	0.0004	0.0010	0.0056	0.0094	0.0377
29	0.0045	0.0111	0.0646	0.1090	0.4358
30	0.0004	0.0010	0.0056	0.0084	0.0330
31	0.0053	0.0128	0.0716	0.1069	0.4211
32	0.0008	0.0018	0.0099	0.0130	0.0507
33	0.0152	0.0366	0.2052	0.3063	1.2207
34	0.0052	0.0126	0.0708	0.1057	0.4164
35	0.0015	0.0037	0.0218	0.0369	0.1478
36	0.0042	0.0102	0.0573	0.0856	0.3372
37	0.0015	0.0037	0.0212	0.0337	0.1345
38	0.0391	0.0946	0.5332	0.8086	3.2153
40	0.0077	0.0186	0.1046	0.1562	0.6184
42	0.0006	0.0015	0.0083	0.0132	0.0523
43	0.0044	0.0106	0.0597	0.0890	0.3493
44	0.0018	0.0046	0.0266	0.0450	0.1792
45	0.0043	0.0102	0.0575	0.0858	0.3369
46	0.0008	0.0018	0.0106	0.0168	0.0666
47	0.0079	0.0191	0.1074	0.1604	0.6352
49	0.0089	0.0215	0.1208	0.1803	0.7145
51	0.0392	0.0937	0.4699	0.5673	2.3228
53	0.0215	0.0520	0.2511	0.2901	1.2173
54	0.0173	0.0406	0.2141	0.2736	1.0795
Total	0.3102	0.7474	4.0948	5.9049	23.4940

Table 10. Predicted Crash Severity by Speed Change Lane (Speed Change)

Seg. No.	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)
2	0.0027	0.0066	0.0368	0.0549	0.2539
5	0.0028	0.0065	0.0353	0.0465	0.2042
13	0.0029	0.0071	0.0403	0.0633	0.2593
15	0.0034	0.0083	0.0464	0.0693	0.2813
39	0.0031	0.0074	0.0414	0.0618	0.2593
41	0.0022	0.0053	0.0296	0.0441	0.2813
48	0.0031	0.0074	0.0414	0.0618	0.2593
50	0.0025	0.0060	0.0339	0.0505	0.2813
52	0.0034	0.0083	0.0403	0.0465	0.2215
55	0.0040	0.0096	0.0466	0.0539	0.2376
56	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0301	0.0725	0.3920	0.5528	2.5390

Table 11. Predicted Freeway 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	0.07	0.2	1.03	3.0	1.10	3.2
Highway Segment	Collision with Fixed Object	4.16	12.0	9.87	28.6	14.03	40.6
Highway Segment	Collision with Other Object	0.23	0.7	1.98	5.7	2.20	6.4
Highway Segment	Other Single-vehicle Collision	2.70	7.8	2.56	7.4	5.26	15.2
Highway Segment	Collision with Parked Vehicle	0.18	0.5	0.36	1.1	0.54	1.6
Highway Segment	Total Single Vehicle Crashes	7.34	21.2	15.80	45.7	23.13	67.0
Highway Segment	Right-Angle Collision	0.21	0.6	0.23	0.7	0.44	1.3
Highway Segment	Head-on Collision	0.07	0.2	0.03	0.1	0.10	0.3
Highway Segment	Other Multi-vehicle Collision	0.22	0.6	0.60	1.7	0.82	2.4
Highway Segment	Rear-end Collision	2.34	6.8	3.91	11.3	6.25	18.1
Highway Segment	Sideswipe, Same Direction Collision	0.88	2.6	2.92	8.5	3.81	11.0
Highway Segment	Total Multiple Vehicle Crashes	3.72	10.8	7.70	22.3	11.42	33.0
Highway Segment	Total Highway Segment Crashes	11.06	32.0	23.49	68.0	34.55	100.0
	Total Crashes	11.06	32.0	23.49	68.0	34.55	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 12. Predicted Exit Speed Change Lane Crash Type Distribution (Speed Change)

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	0.07	4.2	0.07	4.2
Highway Segment	Collision with Fixed Object	0.12	6.9	0.28	16.3	0.40	23.2
Highway Segment	Collision with Other Object	0.02	0.9	0.07	4.2	0.09	5.2
Highway Segment	Other Single-vehicle Collision	0.09	5.0	0.08	4.9	0.17	9.9
Highway Segment	Collision with Parked Vehicle	0.00	0.0	0.02	1.2	0.02	1.2
Highway Segment	Total Single Vehicle Crashes	0.22	12.8	0.53	30.8	0.76	43.6
Highway Segment	Right-Angle Collision	0.01	0.5	0.00	0.0	0.01	0.5
Highway Segment	Head-on Collision	0.00	0.0	0.00	0.0	0.00	0.0
Highway Segment	Other Multi-vehicle Collision	0.00	0.0	0.01	0.6	0.01	0.6
Highway Segment	Rear-end Collision	0.25	14.2	0.37	21.1	0.61	35.3
Highway Segment	Sideswipe, Same Direction Collision	0.06	3.2	0.29	16.9	0.35	20.0
Highway Segment	Total Multiple Vehicle Crashes	0.31	17.8	0.67	38.6	0.98	56.4
Highway Segment	Total Highway Segment Crashes	0.53	30.6	1.20	69.4	1.73	100.0
	Total Crashes	0.53	30.6	1.20	69.4	1.73	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. Predicted Entrance Speed Change Lane Crash Type Distribution (Speed Change)

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	0.01	0.6	0.01	0.6
Highway Segment	Collision with Fixed Object	0.13	6.8	0.40	21.3	0.52	28.2
Highway Segment	Collision with Other Object	0.01	0.6	0.09	5.0	0.10	5.6
Highway Segment	Other Single-vehicle Collision	0.09	4.7	0.09	4.8	0.18	9.5
Highway Segment	Collision with Parked Vehicle	0.01	0.6	0.00	0.0	0.01	0.6
Highway Segment	Total Single Vehicle Crashes	0.24	12.8	0.59	31.8	0.82	44.5
Highway Segment	Right-Angle Collision	0.02	0.9	0.02	0.9	0.03	1.8
Highway Segment	Head-on Collision	0.01	0.6	0.01	0.3	0.02	0.9
Highway Segment	Other Multi-vehicle Collision	0.01	0.3	0.05	2.9	0.06	3.2
Highway Segment	Rear-end Collision	0.18	9.8	0.35	18.7	0.53	28.5
Highway Segment	Sideswipe, Same Direction Collision	0.07	3.6	0.32	17.4	0.39	21.0
Highway Segment	Total Multiple Vehicle Crashes	0.28	15.2	0.75	40.3	1.03	55.5
Highway Segment	Total Highway Segment Crashes	0.52	27.9	1.33	72.1	1.85	100.0
	Total Crashes	0.52	27.9	1.33	72.1	1.85	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.