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Maverik Convenience Store
(Interstate 25 / Jefferson St.)

Traffic Impact Study

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FINAL

Presented to:

City of Albuquerque
Transportation Development Section

NM Dept. of Transportation
District 3

Prepared for:

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**Maverik Convenience Store
(Interstate 25 / Jefferson St.)
Traffic Impact Study**

Executive Summary

The purpose of this study is to evaluate the transportation conditions before and after implementation of the proposed Maverik Convenience Store, determine the impact of the development on the adjacent transportation system and recommend mitigation measures where necessary. This study is prepared to meet the requirements of the City of Albuquerque Transportation Development Section, Planning Department and the New Mexico Department of Transportation (NMDOT) associated with their review of the Maverik Convenience Store.

The proposed development is located at the south quadrant of Interstate 25 / Jefferson St. The study area includes the intersections of Singer Blvd. / Jefferson St., the two Interstate 25 ramps / Jefferson St., McLeod Rd. / Jefferson St., Outback Dr. / Jefferson St., as well as the existing two driveways for the project.

The proposed development is to be developed as a 28 pump Gasoline / Service Station w/ Convenience Market. Since this development will replace an existing restaurant, those trips have been subtracted from the overall trips for the purpose of quantifying the net increase (decrease) in the trip generation rate. The anticipated implementation year for this site is the year 2019. A horizon year of 2029 will also be analyzed. According to the Institute of Traffic Engineers' (ITE) trip generation rates, the weekday AM Peak Hour period is anticipated to generate approximately 222 entering trips and 213 exiting trips. During the weekday PM Peak Hour period, it is anticipated that it will generate approximately 200 entering trips and 192 exiting trips. The previous use (Quality Restaurant) generated approximately 4 entering and 4 exiting trips during the AM Peak Hour and approximately 52 entering and 26 exiting trips during the PM Peak Hour.

The development will be accessed via two existing unsignalized driveways. The northern driveway (Driveway "A") will be restricted to a right-in only driveway. The southern driveway will be full access. There are no previous developments to be included in this analysis.

Analysis results by analysis year are included in the following tables:

EXECUTIVE SUMMARY RESULTS TABLE

		2019 AM(PM) PEAK HOUR						
INTERSECTION NO. & NAME	SIGNALIZATION	NO BUILD		BUILD		MITIGATED		2019 RECOMMENDATIONS
1 - SingerBlvd. / Jefferson St.	Signalized	C- 20.1	(D- 43.0)	C- 20.2	(D- 43.0)			No recommendation.
2 - I-25 N. Ramp / Jefferson St.	Signalized	B- 13.7	(C- 30.0)	B- 14.1	(C- 33.0)			No Recommendation.
3 - I-25 S. Ramp / Jefferson St.	Signalized	B- 18.8	(C- 22.7)	B- 19.3	(C- 23.1)			No Recommendation.
4 - McLeod Rd. / Jefferson St.	Signalized	B- 17.8	(B- 16.4)	C- 21.9	(C- 21.3)			No recommendation.
5 - Outback Driveway/ Jefferson St.	Unsignalized	u- 0.1	(u- 0.2)	u- 0.1	(u- 0.3)			No Recommendation.
6 - Driveway "A" / Jefferson St.	Unsignalized	u- 1.4	(u- 1.0)	u- 1.6	(u- 1.3)			No Recommendation.
7 - Driveway "B" / Jefferson St.	Unsignalized	u- 0.0	(u- 0.0)	u- 22.6	(u- 8.5)			No Recommendation.

EXECUTIVE SUMMARY RESULTS TABLE

		2029 AM(PM) PEAK HOUR						
INTERSECTION NO. & NAME	SIGNALIZATION	NO BUILD		BUILD		MITIGATED		2029 RECOMMENDATIONS
1 - SingerBlvd. / Jefferson St.	Signalized	C- 20.9	(D- 46.4)	C- 21.0	(D- 46.4)			No recommendation.
2 - I-25 N. Ramp / Jefferson St.	Signalized	B- 14.1	(D- 35.7)	B- 14.7	(D- 42.0)			No Recommendation.
3 - I-25 S. Ramp / Jefferson St.	Signalized	B- 19.3	(C- 23.6)	B- 19.9	(C- 24.1)			No Recommendation.
4 - McLeod Rd. / Jefferson St.	Signalized	B- 18.6	(B- 17.4)	C- 23.3	(C- 24.5)			No recommendation.
5 - Outback Driveway / Jefferson St.	Unsignalized	u- 0.1	(u- 0.3)	u- 0.1	(u- 0.4)			No Recommendation.
6 - Driveway "A" / Jefferson St.	Unsignalized	u- 1.7	(u- 1.2)	u- 1.9	(u- 3.2)			No Recommendation.
7 - Driveway "B" / Jefferson St.	Unsignalized	u- 0.0	(u- 0.0)	u- 33.7	(u- 1.6)			No Recommendation.

In summary, the proposed development does not have a significant adverse impact to the adjacent transportation system and the minimal impact to the transportation system can be mitigated by the recommended measures described in this report and summarized in the table above. In summary, the recommendations of this study are:

Recommendations:

Implementation Year (2019) – Design and construction of all improvements including driveway modifications should preserve adequate sight distances along Jefferson St.

Driveway “A” should be designed and constructed as a right-turn-in only driveway.

Driveway “B” should be designed and constructed as a full-access unsignalized driveway with two exiting lanes (one for left turns and one for right turns) and one entering lane minimum.

Drive design should be able to accommodate large delivery trucks.

Horizon Year (2029) – Same recommendations as Implementation Year. Also, cross access should be incorporated when the property to the south develops to provide Maverik traffic access to Outback Dr. to relieve future congestion at Driveway “B”.

**Maverik Convenience Store
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Traffic Impact Study**

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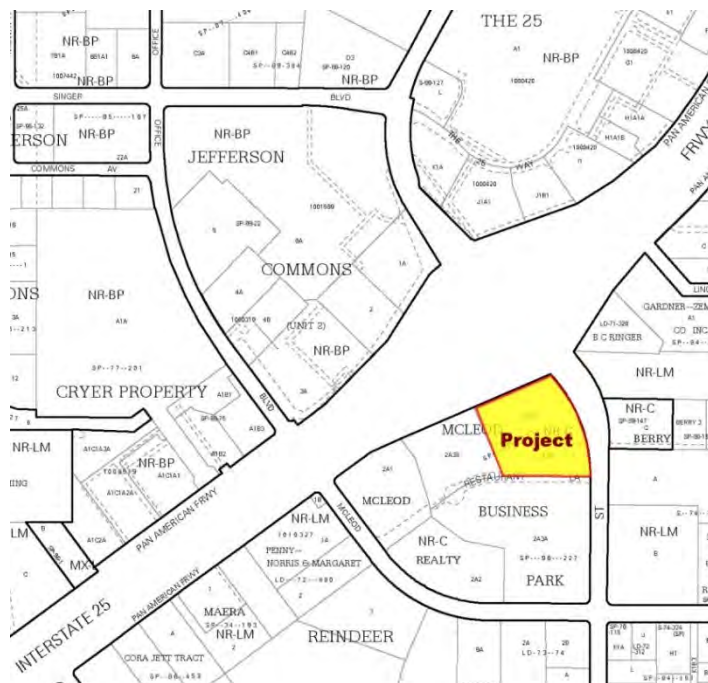
Maverik Convenience Store (Interstate 25 / Jefferson St.) Traffic Impact Study

Introduction

The purpose of this study is to evaluate the transportation conditions before and after implementation of the proposed Maverik Convenience Store and determine the impact of the development on the adjacent transportation system. The recommendations of this study will provide measures to mitigate the impact of the development of the site plan on critical intersections and street segments. This study is prepared to meet the requirements of the City of Albuquerque Transportation Development Section, Planning Department and the New Mexico Dept. of Transportation (NMDOT), District 3 Office, associated with its review of the Maverik Convenience Store as shown on the plan on Page A-3 in the Appendix of this report.

The proposed development is located at the south quadrant of Interstate 25 / Jefferson St. in Albuquerque, New Mexico. If the property was to develop in a manner significantly different than the proposed plan considered in this report such that the number of generated trips is significantly greater, then an update to this study may be required by the City of Albuquerque Transportation Development Section, Planning Department or the New Mexico Department of Transportation.

Following is a vicinity map depicting the location of the proposed project:



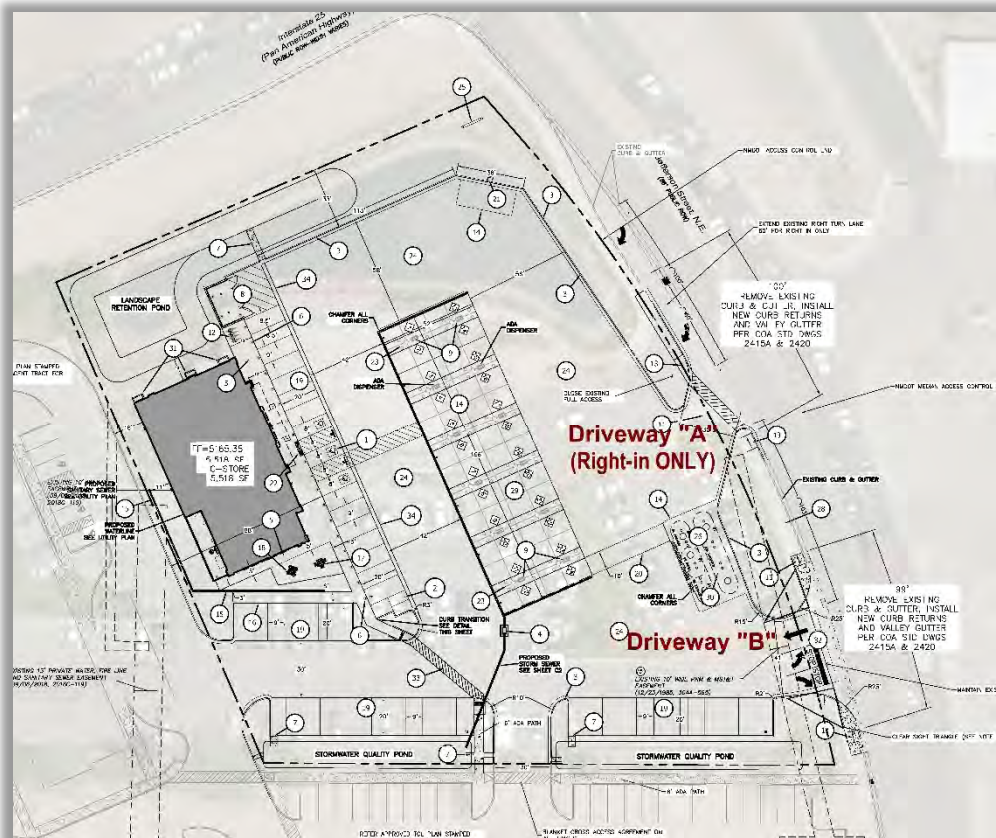
Description of Proposed Development

The proposed project is described as a 28 pump Gas station w/ Convenience Store at the south quadrant of Interstate 25 / Jefferson St. The project lies in the city limits of Albuquerque, NM. The project fronts on a Community Principal Arterial Roadway (Jefferson St.) which is maintained by the New Mexico Department of Transportation. Therefore, the project will be required to comply with the requirements of the City of Albuquerque with regard to the overall development and with the requirements of the New Mexico Department of Transportation with regard to transportation issues along State roads.

This development will be constructed in one phase. This study will analyze an implementation year of 2019 and a horizon year of 2029.

The development will be accessed via two existing driveways for this parcel of land. The north driveway (Driveway "A") is proposed as a right-in only driveway. The south driveway (Driveway "B") is proposed to be full access.

Following is the proposed site development plan depicting driveway (access) locations (also, see Appendix Page A-3 for a more complete version of the proposed site development plan):



Study Area Conditions

A Traffic Impact Study Scoping Meeting was held with the City of Albuquerque Transportation Dev. Section, Planning Dept. staff (Ernest Armijo) & NMDOT staff (Nancy Perea, Margaret Haynes, and Brad Julian). During the meeting, it was determined that the study area would include the following list of intersections to be analyzed in the Traffic Impact Study:

1. Singer Blvd. / Jefferson St.
2. I-25 N. Ramp / Jefferson St.
3. I-25 S. Ramp / Jefferson St.
4. McLeod Rd. / Jefferson St.
5. Outback Dr. / Jefferson St.
6. Driveway "A" / Jefferson St.
7. Driveway "B" / Jefferson St.

This scope of study was based on the assumption that the parcel in question would be developed as a gas station / convenience store as shown on the proposed site plan.

There are no known land development projects in the area to be incorporated into the background traffic model for this study. There are no known Transportation Improvement Program projects in the area that need to be considered in the Traffic Impact Study.

This project is served by public transit services in the area; specifically Routes #140, 251 and 551. These routes run along Jefferson St. in the vicinity of the project. See Appendix page A-118 for City of Albuquerque Transit Bus Route Map.

Jefferson St., Singer Blvd. & McLeod Rd. are designated on the Futures 2040 Metropolitan Transportation Plan (2040 Long Range Bikeway System) as either Proposed or Existing Bicycle Lanes & Routes. See Appendix Pg. A-6 for a portion of that map.

There are pedestrian facilities in the project area – curb & gutter and sidewalks along the roads, as well as some raised medians for pedestrians & bicyclists crossing against traffic.

Singer Blvd. & McLeod Rd. are classified as Major Collector Roadways on the Mid-Region Council of Government's Futures 2040 Long Range Roadway System Map. They are two-lane urban-type roadways with no raised median and curb & gutter with sidewalks in the area. The posted speed limit along McLeod Rd. is 35 MPH and along Singer Blvd. is 30 MPH.

Jefferson St. is classified as Community Principal Arterial Roadway on the Mid-Region Council of Government's Futures 2040 Long Range Roadway System Map. It is a four-lane roadway with curb & gutter as well as sidewalks. The posted speed limit along this section is 35 MPH.

Analysis of Existing Conditions

Due to the fact that the Implementation Year is only one year in the future, an existing analysis was not requested by the City of Albuquerque. Existing traffic volumes (turning movement counts) were collected at the intersections targeted for analysis in this study in November 2018 and are included on Appendix Pages A-25 thru A-40.

Analysis of Implementation Year Conditions

Traffic Projections

Background traffic was taken from recent traffic counts (Appendix A-113 through A-117). Traffic count data (i.e., AM / PM Peak Hour turning movements volumes) were adjusted for demand based on the remnant queue on each approach of a major intersection at the end of each 15-minute period of the count interval. To accomplish this quantification of queuing at the end of each 15-minute interval, a company was hired to launch a drone with video camera to an altitude of approximately 400 feet above ground level to capture the queuing during the following time intervals:

For the AM Peak Hour count period:	For the PM Peak Hour count period:
7:13 AM to 7:17 AM	4:13 PM to 4:17 PM
7:28 AM to 7:32 AM	4:28 PM to 4:32 PM
7:43 AM to 7:47 AM	4:43 PM to 4:47 PM
7:58 AM to 8:02 AM	4:58 PM to 5:02 PM
8:13 AM to 8:17 AM	5:13 PM to 5:17 PM
8:28 AM to 8:32 AM	5:28 PM to 5:32 PM
8:43 AM to 8:47 AM	5:43 PM to 5:47 PM

The drone capture video of the queuing conditions for a four-minute interval. The video was stopped at each 15-minute interval (i.e., 7:15 AM, 7:30 AM, 7:45 AM, etc.) to estimate the number of vehicles queued for each lane group in the video. The queued vehicles were included in the previous 15-minute count interval and subtracted out from the subsequent 15-minute count interval. This count method was utilized for the intersections of Singer / Jefferson, I-25 N. Ramp / Jefferson, and I-25 S. Ramp / Jefferson. McLeod / Jefferson was not visible on the video, so the standard method of counting was utilized.

This study assumes that the development will be implemented in one phase with an implementation year of 2019 and a horizon year of 2029.

Projected trips were calculated based on the Institute of Traffic Engineers (ITE) Trip Generation Manual (10th Edition). Trips for the development were determined based on land use defined on the Conceptual Site Development Plan on Page A-3 in the Appendix of this report. The following table summarized the trip generation rate for the project:

Proposed C-Store (Jefferson St. / Interstate 25)
Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

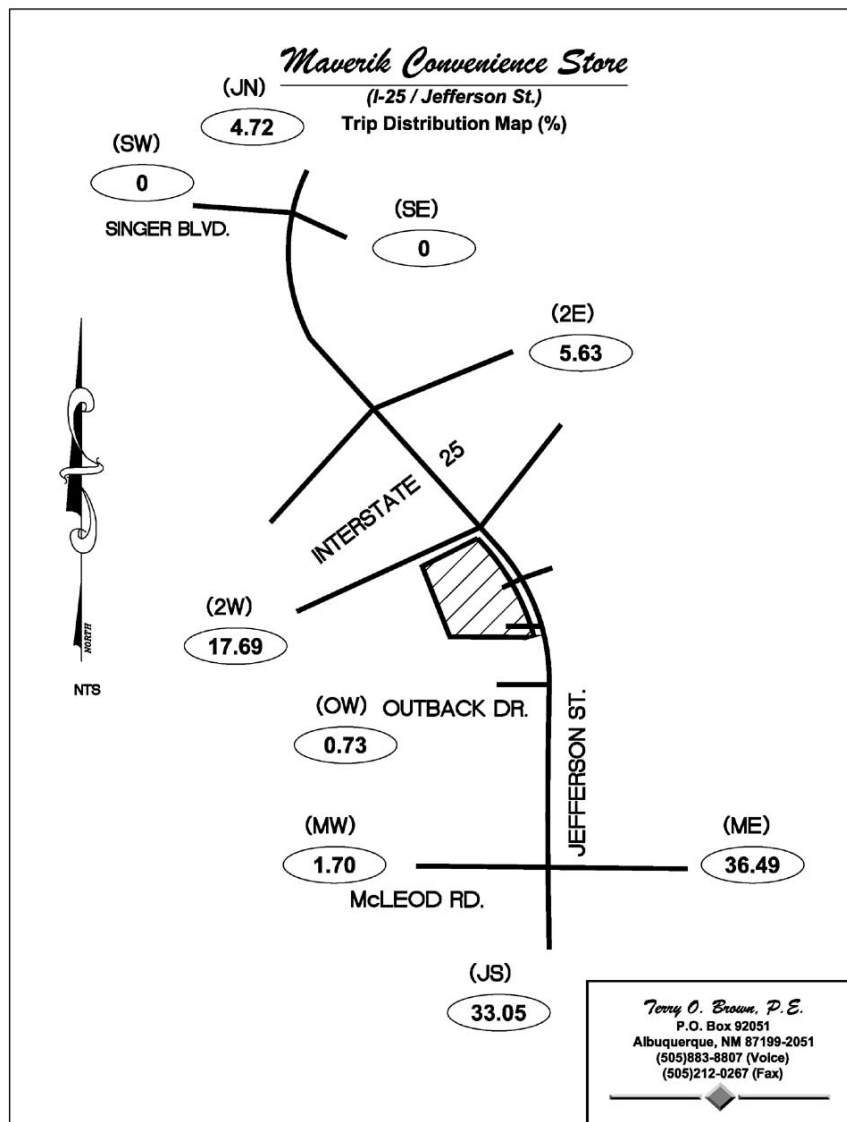
COMMENT	USE (ITE CODE)	24 HR VOL	A. M. PEAK HR.		P. M. PEAK HR.		
	DESCRIPTION	GROSS	ENTER	EXIT	ENTER	EXIT	
	Summary Sheet	Units					
Proposed	Gasoline / Service Station w/ Convenience Market (945)	28.00	6,356	222	213	200	192
Existing	Quality Restaurant (931)	10.00	538	4	4	52	26
	Increase (Decrease) Trip Generation Rate		5,818	218	209	148	166

No pass-by trips were applied to this project. See Appendix Pages A-7 thru A-9 for more information regarding the trip generation.

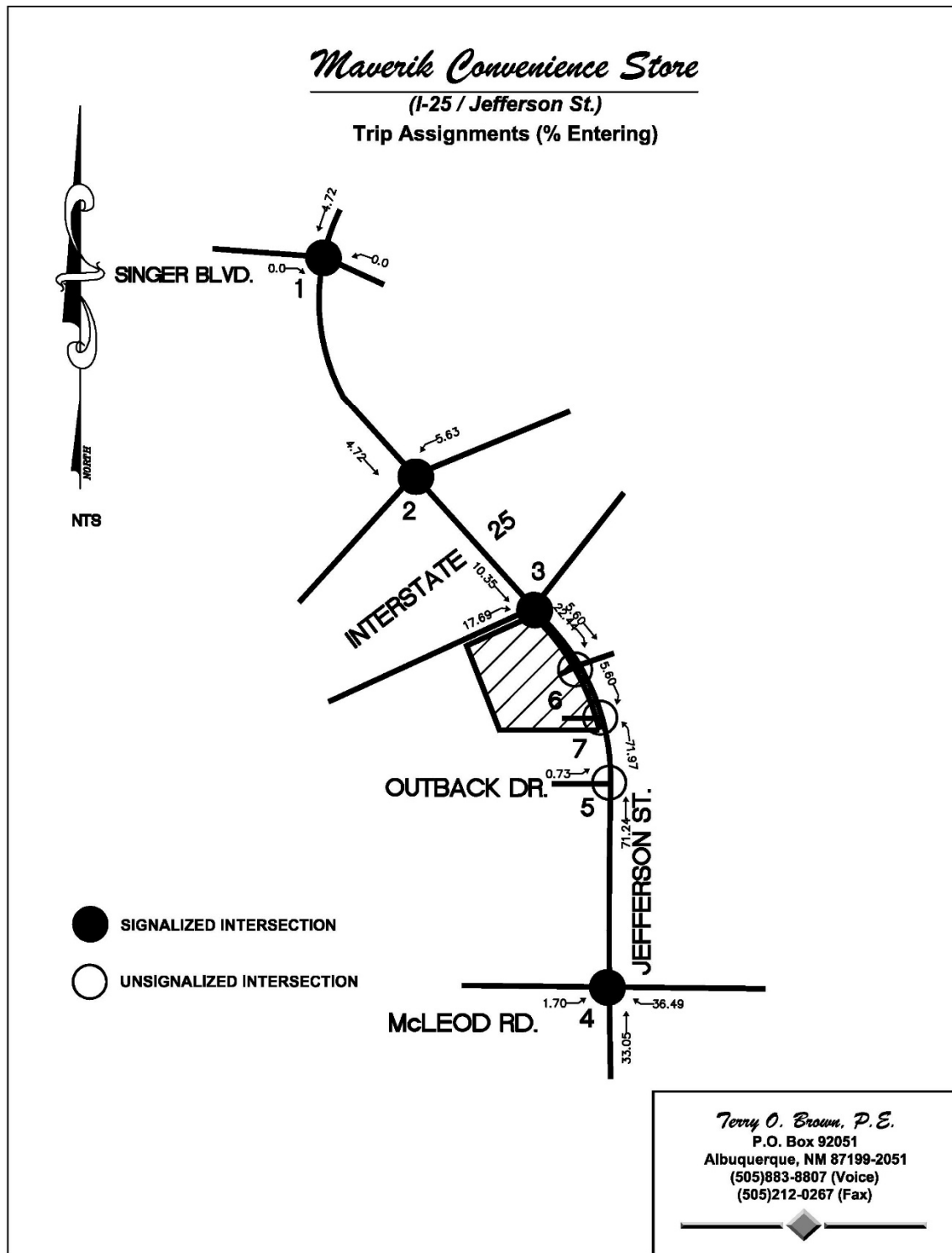
For purposes of determining how much more traffic the proposed Maverick Convenience Store generates than the previous quality restaurant that was on the parcel, the trip generation table above deducts the traffic that was generated by the previous use (restaurant). However, the traffic count (turning movements volumes) data for this project was collected in November 2018 when the restaurant had been closed and was out of business. Therefore, for the purposed of determining 2019 and 2029 BUILD volumes for this analysis, the restaurant trips were not deducted from the trip generation rate for the Maverick facility.

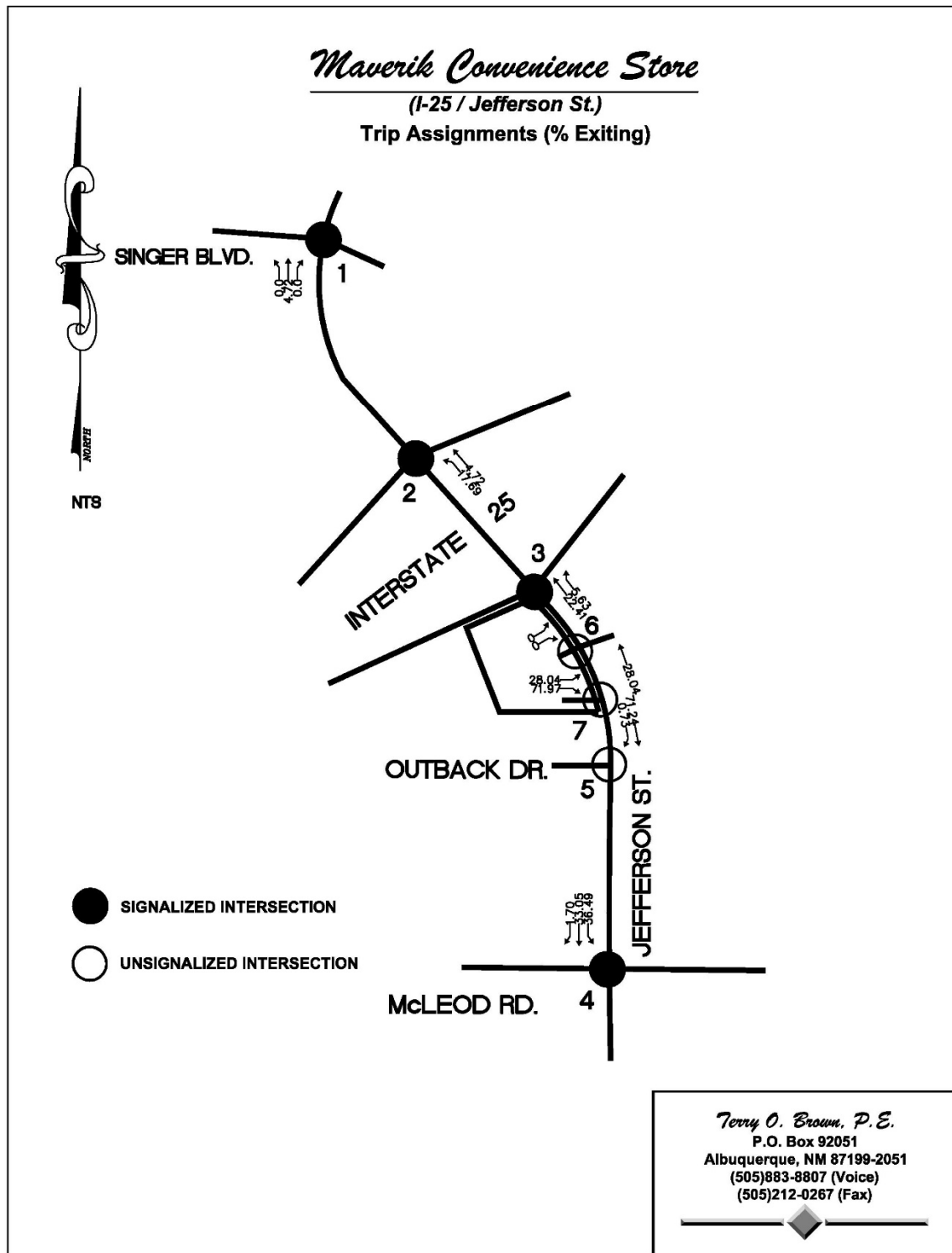
Commercial Trip Distribution

The Gravity Model was used to determine trip distribution where primary trips for the commercial land use development were distributed proportionally to the 2019 projected population of Data Analysis Subzones (DASZ) within a 1.5-mile radius. Population data for the years 2012 and 2040 were taken from the 2040 Socioeconomic Forecasts by Subareas for the Mid-Region of New Mexico supplied by the Mid-Region Council of Governments (MRCOG). Population data from the years 2012 and 2040 was interpolated linearly to obtain 2019 population data to utilize for this analysis. Population Subzones were grouped based on the most likely major street(s) or route(s) to the subject development. The trip distribution worksheets and associated map of data analysis subzones are shown in the Appendix on Pages A-10 thru A-13. The commercial Trip Distribution map can be found below and in the Appendix on Page A-14.



Trip assignments are first made on a percentage basis derived from data established in the trip distribution determination process and logical routing. Those percentages are then applied to the projected trips to determine individual traffic movements. Percentage trip assignments for commercial trips are shown below and in the Appendix on Pages A-15 thru A-16. No adjustment for pass-by trips was applied on this project.





Background traffic growth rates were considered for each individual approach to an intersection that was targeted for analysis based on data from the 2008 through 2017 Traffic Flow maps prepared by the Mid-Region Council of Governments. Most of the Traffic Flow Data for those years taken from the MRCOG Traffic Flow Maps were Standard Data. The data from those years for each approach was plotted on a graph and a linear “regression trend line” calculated using the equation format $y=mx+b$. The growth rate was determined by calculating the average volume increase per year during the time period considered and dividing that volume into the most recent AWDT used in the analysis from which future volumes will be calculated. The rate of growth of that trend line was utilized as the annual growth rate for each approach if that calculated rate appeared feasible. However, in some roadway segments considered in this analysis, the rate indicated either an inconsistent or a negative growth trend; therefore, the growth rate was considered to be a generic 0.5%. Historical Growth Rate Graphs with linear regression trend lines are shown in the Appendix on Pages A-18 thru A-23. The growth rate utilized for each approach to an intersection is printed at the top of the Turning Movement sheets for each intersection (Appendix Pages A-27 thru A-40 & 43 thru 56).

The trip generation, trip distribution and trip assignments were utilized along with the existing 2018 background traffic volumes and the historical traffic growth rates to determine the Implementation year NO BUILD and BUILD volumes, see Appendix Pages A-25 thru A-40. Implementation year AM Peak Hour and PM Peak Hour NO BUILD and BUILD volumes / lane geometry / Level-of-Service results are summarized graphically on the Lanes / Volumes / Analysis Maps at the end of the front-end text of this Study:

Traffic Analysis

A capacity analysis using existing traffic signal timing settings furnished by the City of Albuquerque Traffic Operations Section of the Municipal Development Department was conducted for the Implementation Year (2019) NO BUILD and BUILD Conditions and the results are summarized as follows:

#1 – Singer Blvd. / Jefferson St. - Pages A-57 thru A-84

The results of the 2019 analyses of the signalized intersection of Singer Blvd. / Jefferson St. are summarized in the following tables:

Intersection: 1 - Singer Blvd. / Jefferson St.

2019 AM Peak Hour						2019 PM Peak Hour					
(EXIST. GEOM.)						(EXIST. GEOM.)					
NO BUILD			BUILD			NO BUILD			BUILD		
Lanes		LOS-Delay	Lanes		LOS-Delay	Lanes		LOS-Delay	Lanes		LOS-Delay
EB	L	1	D - 44.7	1	D - 44.7	L	1	E - 64.9	1	E - 64.9	
	T	1	C - 33.0	1	C - 33.0	T	1	C - 32.3	1	C - 32.3	
	R	1	C - 23.8	1	C - 23.8	R	1	E - 69.3	1	E - 69.3	
WB	L	2	D - 41.5	2	D - 41.5	L	2	D - 54.1	2	D - 54.1	
	T	2	D - 37.0	2	D - 37.0	T	2	D - 36.1	2	D - 36.1	
	R	>	D - 37.3	>	D - 37.3	R	>	D - 36.3	>	D - 36.3	
NB	L	1	B - 12.8	1	B - 13.0	L	1	C - 21.2	1	C - 21.4	
	T	2	B - 13.1	2	B - 13.2	T	2	B - 20.0	2	B - 20.0	
	R	1	A - 0.0	1	A - 0.0	R	1	A - 0.0	1	A - 0.0	
SB	L	1	B - 13.6	1	B - 13.6	L	1	B - 18.2	1	B - 18.2	
	T	2	C - 20.7	2	C - 20.9	T	2	C - 32.0	2	C - 32.1	
	R	>	C - 21.1	>	C - 21.2	R	>	C - 32.0	>	C - 32.3	
Intersection:		C - 20.1		C - 20.2		D - 43.0		D - 43.0			
Note: ">" designates a shared right or left turn lane.											
No recommendation.											

The 2019 analysis of the intersection of Singer Blvd. / Jefferson St. demonstrates that the overall intersection level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions analyzed in this report. The implementation of the proposed development increases the delay at the intersection by 0.1 seconds during the AM Peak Hour and by 0.0 seconds during the PM Peak Hour. Therefore, no recommendations are made for the intersection of Singer Blvd. / Jefferson St.

#2 -I-25 N. Ramp / Jefferson St. – Pages A-57 thru A-84

The results of the analysis of the signalized intersection of the I-25 N. Ramp / Jefferson St. are summarized in the following table:

Intersection: 2 - I-25 N. Ramp / Jefferson St.

<u>2019 AM Peak Hour</u>						<u>2019 PM Peak Hour</u>					
(EXIST. GEOM.)						(EXIST. GEOM.)					
NO BUILD			BUILD			NO BUILD			BUILD		
	Lanes	LOS-Delay	Lanes	LOS-Delay		Lanes	LOS-Delay	Lanes	LOS-Delay		
WB	L	2	D - 38.6	2	D - 38.6	L	2	D - 50.5	2	D - 50.6	
	T	2	D - 36.8	2	D - 36.8	T	2	D - 45.3	2	D - 45.5	
	R	1	D - 35.5	1	D - 35.1	R	1	C - 34.2	1	C - 34.0	
NB	L	1	A - 8.3	1	A - 9.9	L	1	D - 36.8	1	D - 38.4	
	T	2	A - 0.7	2	A - 0.6	T	2	A - 0.2	2	A - 0.1	
	T	2	B - 12.5	2	B - 13.8	T	2	C - 26.7	2	C - 30.5	
SB	R	1	B - 12.8	1	B - 14.0	R	1	D - 36.0	1	D - 45.0	
	Intersection:		B - 13.7		B - 14.1		C - 30.0		C - 33.0		
	Note: ">" designates a shared right or left turn lane.										
No Recommendation.											

The 2019 analysis of the intersection of the I-25 N. Ramp (WB) / Jefferson St. (NB / SB) demonstrates that the delays will be acceptable for all conditions analyzed in this report. Therefore, no recommendations are made for the intersection of the I-25 N. Ramp / Jefferson St.

#3 –I-25 S. Ramp / Jefferson St. – Pages A-57 thru A-84

The results of the analysis of the signalized intersection of the I-25 S. Ramp / Jefferson St. are summarized in the following table:

Intersection: 3 - I-25 S. Ramp / Jefferson St.

2019 AM Peak Hour						2019 PM Peak Hour					
		(EXIST. GEOM.)						(EXIST. GEOM.)			
		NO BUILD		BUILD				NO BUILD		BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay			Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	2	C - 28.9	2	C - 28.7	L	2	D - 41.1	2	D - 41.0	
	T	2	C - 33.5	2	C - 33.2	T	2	D - 37.9	2	D - 37.8	
	R	1	C - 29.7	1	C - 31.2	R	1	C - 31.9	1	C - 33.0	
NB	L		A - 0.0		A - 0.0	L		A - 0.0		A - 0.0	
	T	2	B - 17.9	2	B - 19.0	T	2	C - 25.4	2	C - 26.6	
	R	>	B - 18.0	>	B - 19.1	R	>	C - 25.8	>	C - 27.0	
SB	L	1	B - 11.0	1	B - 11.9	L	1	B - 14.8	1	B - 15.9	
	T	2	A - 0.2	2	A - 0.3	T	2	A - 0.2	2	A - 0.2	
	R		A - 0.0		A - 0.0	R		A - 0.0		A - 0.0	
Intersection:		B - 18.8		B - 19.3				C - 22.7		C - 23.1	

Note: ">" designates a shared right or left turn lane.

No Recommendation.

The 2019 analysis of the intersection of the I-25 S. Ramp / Jefferson St. demonstrates that the delays will be acceptable for all conditions analyzed in this report. Therefore, no recommendations are made for the intersection of the I-25 S. Ramp / Jefferson St.

#4 – McLeod Rd. / Jefferson St. – Pages A-57 thru A-84

The results of the analysis of the signalized intersection of the McLeod Rd. / Jefferson St. are summarized in the following table:

Intersection: 4 - McLeod Rd. / Jefferson St.

<u>2019 AM Peak Hour</u>						<u>2019 PM Peak Hour</u>					
		(EXIST. GEOM.)						(EXIST. GEOM.)			
		NO BUILD		BUILD				NO BUILD		BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay			Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	1	C - 20.7	1	C - 21.3	L	1	C - 23.7	1	C - 23.8	
	T	1	C - 20.7	1	C - 21.0	T	1	C - 24.6	1	C - 24.5	
	R	>	C - 20.7	>	C - 21.0	R	>	C - 24.6	>	C - 24.5	
WB	L	1	C - 23.8	1	C - 24.1	L	1	C - 28.8	1	C - 28.6	
	T	1	C - 20.1	1	C - 20.4	T	1	C - 23.1	1	C - 23.1	
	R	1	C - 21.2	1	C - 21.9	R	1	B - 19.5	1	B - 19.1	
NB	L	1	B - 11.6	1	B - 15.9	L	1	B - 10.4	1	B - 13.2	
	T	2	B - 18.7	2	C - 26.3	T	2	B - 17.6	2	C - 22.7	
	R	>	B - 18.6	>	C - 26.2	R	>	B - 17.7	>	C - 22.7	
SB	L	1	B - 12.2	1	B - 19.7	L	1	B - 13.0	1	C - 29.1	
	T	2	B - 14.9	2	B - 18.1	T	2	B - 12.4	2	B - 14.6	
	R	>	B - 14.9	>	B - 18.0	R	>	B - 12.3	>	B - 14.6	
Intersection:		B - 17.8		C - 21.9				B - 16.4		C - 21.3	

Note: ">" designates a shared right or left turn lane.

No recommendation.

The 2019 analysis of the intersection of the McLeod Rd. / Jefferson St. demonstrates that the delays will be acceptable for all conditions analyzed in this report. Therefore, no recommendations are made for the intersection of the McLeod Rd. / Jefferson St.

#5 – Outback Dr. / Jefferson St. – Pages A-57 thru A-84

The results of the analysis of the unsignalized intersection of Outback Dr. / Jefferson St. are summarized in the following table:

Intersection: 5 - Outback Driveway / Jefferson St.

<u>2019 AM Peak Hour</u>					<u>2019 PM Peak Hour</u>						
(EXIST. GEOM.)					(EXIST. GEOM.)						
		NO BUILD		BUILD			NO BUILD		BUILD		
		Lanes	LOS-Delay	Lanes	LOS-Delay			Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	>	B - 12.7	>	C - 19.8	L	>	C - 15.8	>	C - 22.5	
	T	1	A - 0.0	1	A - 0.0	T	1	A - 0.0	1	A - 0.0	
	R	>	B - 12.7	>	C - 19.8	R	>	C - 15.8	>	C - 22.5	
NB	L	>	A - 8.1	>	A - 8.4	L	>	A - 9.3	>	A - 9.8	
	T	2	A - 0.1	2	A - 0.1	T	2	A - 0.1	2	A - 0.2	
	R		A - 0.0	0	A - 0.0	R	0	A - 0.0	0	A - 0.0	
SB	L		A - 0.0	0	A - 0.0	L	0	A - 0.0	0	A - 0.0	
	T	2	A - 0.0	2	A - 0.0	T	2	A - 0.0	2	A - 0.0	
	R	>	A - 0.0	>	A - 0.0	R	>	A - 0.0	>	A - 0.0	
Intersection:		<u>u - 0.1</u>		<u>u - 0.1</u>		<u>u - 0.2</u>		<u>u - 0.3</u>			
Note: ">" designates a shared right or left turn lane.											
No Recommendation.											

The 2019 analysis of the intersection of Outback Dr. / Jefferson St. demonstrates that the delays will be acceptable for all conditions analyzed in this report. Therefore, no recommendations are made for the intersection of Outback Dr. / Jefferson St.

#6 – Driveway “A” / Jefferson St. - Pages A-57 thru A-84

Driveway “A” is full access on the east side of Jefferson St. (existing driveway) and restricted to right-in only on the west side. Driveway “A” on the west side of Jefferson St. has been relocated approximately 35 feet to the south to slightly offset it from the existing driveway across the street on the east side of Jefferson St. The offset should not be detrimental since Driveway “A” into the Maverik Store is a right-in only access. The results of the 2019 analyses of the unsignalized intersection of Driveway “A” / Jefferson St. are summarized in the following table:

Intersection: 6 - Driveway "A" / Jefferson St.

2019 AM Peak Hour						2019 PM Peak Hour					
		(EXIST. GEOM.)						(EXIST. GEOM.)			
		NO BUILD		BUILD				NO BUILD		BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay			Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	1	A - 0.0	1	A - 0.0	L	1	A - 0.0	1	A - 0.0	
	T	1	A - 0.0	1	A - 0.0	T	1	A - 0.0	1	A - 0.0	
	R	>	A - 0.0	>	A - 0.0	R	>	A - 0.0	>	A - 0.0	
WB	L	>	D - 25.9	>	D - 33.4	L	>	C - 17.5	>	D - 30.4	
	T	1	D - 25.9	1	A - 0.0	T	1	C - 17.5	1	A - 0.0	
	R	>	D - 25.9	>	D - 33.4	R	>	C - 17.5	>	D - 30.4	
NB	L	>	A - 8.0	>	A - 0.0	L	>	A - 8.9	>	A - 0.0	
	T	2	A - 0.0	2	A - 0.0	T	2	A - 0.0	2	A - 0.0	
	R	>	A - 0.0	>	A - 0.0	R	>	A - 0.0	>	A - 0.0	
SB	L	>	B - 11.1	>	B - 11.5	L	>	B - 10.1	>	B - 10.4	
	T	2	A - 0.6	2	A - 0.3	T	2	A - 0.7	2	A - 0.8	
	R	1	A - 0.0	1	A - 0.0	R	1	A - 0.0	1	A - 0.0	
Intersection:		u - 1.4		u - 1.6		u - 1.0		u - 1.3			
Note: ">" designates a shared right or left turn lane.											
No Recommendation.											

The 2019 analysis of the intersection of Driveway "A" / Jefferson St. demonstrates that the delays will be acceptable for all conditions analyzed in this report except for the eastbound (exiting) left turn movement. Therefore, no recommendations are made for the intersection of Driveway "A" / Jefferson St.

Driveway "A" is located approximately 275 feet southeast of the I-25 S. Ramp / Jefferson St. signalized intersection. It has historically been a full access unsignalized driveway since the mid-1990's. It was aligned with an existing full-access unsignalized driveway across the street that accesses an existing Holiday Inn & Suites Motel and a NAPA Truck Part and Service facility. Driveway "A" into the Maverik Store is being restricted to a right-in only driveway since the New Mexico Department of Transportation has an access control line in the middle of Jefferson St. that extends through the driveway, thus prohibiting left-in and left-out traffic.

#7 – Driveway "B" / Jefferson St. - Pages A-57 thru A-84

The results of the 2019 analyses of the full access unsignalized intersection of Driveway "B" / Jefferson St. are summarized in the following table:

Intersection: 7 - Driveway "B" / Jefferson St.

<u>2019 AM Peak Hour BUILD</u>						<u>2019 PM Peak Hour BUILD</u>					
(EXIST. GEOM.)						(EXIST. GEOM.)					
NO BUILD			BUILD			NO BUILD			BUILD		
Lanes	LOS-Delay		Lanes	LOS-Delay		Lanes	LOS-Delay		Lanes	LOS-Delay	
EB	L	> A - 0.0	>	F - 189		L	> A - 0.0	>	F - 87.1		
	T	1 A - 0.0	>	F - 189		T	1 A - 0.0	>	F - 87.1		
	R	> A - 0.0	>	F - 189		R	> A - 0.0	>	F - 87.1		
NB	L	> A - 0.0	>	A - 8.8		L	> A - 0.0	>	A - 9.6		
	T	2 A - 0.0	>	A - 1.3		T	2 A - 0.0	>	A - 1.1		
	R	> A - 0.0	>	A - 0.0		R	> A - 0.0	>	A - 0.0		
SB	L	> A - 0.0	>	A - 0.0		L	> A - 0.0	>	A - 0.0		
	T	2 A - 0.0	>	A - 0.0		T	2 A - 0.0	>	A - 0.0		
	R	> A - 0.0	>	A - 0.0		R	> A - 0.0	>	A - 0.0		
Intersection:		u - 0.0		u - 22.6				u - 0.0		u - 8.5	

Note: ">" designates a shared right or left turn lane.

No Recommendation.

Driveway "B" is located approximately 150 feet south of Driveway "A" and approximately 450 feet south of the I-25 northbound off-ramp. The 2019 analysis of the intersection of Driveway "B" / Jefferson St. demonstrates that the delays will be excessive during the 2019 AM and 2019 PM Peak Hour BUILD Conditions. Restricting Driveway "A" to prevent exiting traffic (especially left-out movements) has forced all exiting traffic from this development to Driveway "B". It is anticipated that there will be long delays and long queues for exiting traffic in Driveway "B". To lessen the problem, it is recommended that Driveway "B" incorporate two exiting lanes – one for left turn movements and one for right turn movements.

Analysis of Horizon Year Conditions

Traffic Projections

Methodology to forecast 2029 Horizon Year background traffic volumes, trip distribution of new trips generated by the Maverik project, and trip generation calculations utilized were the same as for the Implementation Year analysis with the one exception that the

Traffic Analysis

A capacity analysis using existing traffic signal timing setting furnished by the City of Albuquerque Traffic Operations Section of the Municipal Development Department was conducted for the Horizon Year (2029) NO BUILD and BUILD Conditions and the results are summarized as follows:

#1 – Singer Blvd. / Jefferson St. - Pages A-85 thru A-112

The results of the 2029 analyses of the signalized intersection of Singer Blvd. / Jefferson St. are summarized in the following tables:

Intersection: 1 - Singer Blvd. / Jefferson St.

2029 AM Peak Hour						2029 PM Peak Hour					
(EXIST. GEOM.)						(EXIST. GEOM.)					
NO BUILD			BUILD			NO BUILD			BUILD		
Lanes		LOS-Delay	Lanes		LOS-Delay	Lanes		LOS-Delay	Lanes		LOS-Delay
EB	L	1	D - 44.8	1	D - 44.8	L	1	E - 66.8	1	E - 66.8	
	T	1	C - 32.9	1	C - 32.9	T	1	C - 32.6	1	C - 32.6	
	R	1	C - 23.0	1	C - 23.0	R	1	E - 80.2	1	E - 80.2	
WB	L	2	D - 42.0	2	D - 42.0	L	2	E - 55.2	2	E - 55.2	
	T	2	D - 37.3	2	D - 37.3	T	2	D - 36.6	2	D - 36.6	
	R	>	D - 37.5	>	D - 37.5	R	>	D - 36.9	>	D - 36.9	
NB	L	1	B - 14.5	1	B - 14.7	L	1	C - 22.7	1	C - 22.9	
	T	2	B - 13.5	2	B - 13.5	T	2	C - 20.3	2	C - 20.4	
	R	1	A - 0.0	1	A - 0.0	R	1	A - 0.0	1	A - 0.0	
SB	L	1	B - 14.4	1	B - 14.4	L	1	B - 18.7	1	B - 18.7	
	T	2	C - 22.3	2	C - 22.4	T	2	C - 34.1	2	C - 34.4	
	R	>	C - 22.6	>	C - 22.8	R	>	C - 34.2	>	C - 34.5	
Intersection:		C - 20.9		C - 21.0		D - 46.4		D - 46.4			
Note: ">" designates a shared right or left turn lane.											
No recommendation.											

The 2029 analysis of the intersection of Singer Blvd. / Jefferson St. demonstrates that the overall intersection level-of-service will be acceptable for both the AM Peak Hour and PM Peak Hour NO BUILD and BUILD conditions analyzed in this report. The implementation of the proposed development increases the delay at the intersection by 0.1 seconds during the AM Peak Hour and by 0.0 seconds during the PM Peak Hour. Therefore, no recommendations are made for the intersection of Singer Blvd. / Jefferson St.

The 95th Percentile Queuing calculation (HCM 6 methodology) results based on the horizon year analysis are summarized in the following table:

Queueing Analysis Summary Sheet

Project: **Maverik Convenience Store (I-25 / Jefferson St.)**
 Intersection: **Singer Blvd. / Jefferson St.**

2029														
Approach		Left Turns			Thru Movements			Right Turns						
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
Existing Lane Length	1	124	170+	1	29	Cont	1	185	170+					
AM NO BUILD Queue	1	131	166	1	31	31	1	195	169					
AM BUILD Queue	1	131	166	1	31	31	1	195	169					
Existing Lane Length	1	222	170+	1	37	Cont	1	464	170+					
PM NO BUILD Queue	1	234	333	1	39	41	1	490	694					
PM BUILD Queue	1	234	333	1	39	41	1	490	694					
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
Existing Lane Length	2	75	170	2	20	Cont	0	21	0					
AM NO BUILD Queue	2	79	46	2	21	23	0	22	26					
AM BUILD Queue	2	79	46	2	21	23	0	22	26					
Existing Lane Length	2	295	170	2	45	Cont	0	46	0					
PM NO BUILD Queue	2	311	215	2	47	54	0	49	54					
PM BUILD Queue	2	311	215	2	47	54	0	49	54					
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
Existing Lane Length	1	389	115	2	535	Cont	1	303	300					
AM NO BUILD Queue	1	410	228	2	564	179	1	320	0					
AM BUILD Queue	1	410	228	2	574	184	1	320	0					
Existing Lane Length	1	193	115	2	273	Cont	1	157	300					
PM NO BUILD Queue	1	204	154	2	288	118	1	166	0					
PM BUILD Queue	1	204	154	2	296	120	1	166	0					
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
Existing Lane Length	1	20	140	2	264	Cont	0	162	0					
AM NO BUILD Queue	1	21	13	2	279	200	0	171	195					
AM BUILD Queue	1	21	13	2	289	205	0	171	197					
Existing Lane Length	1	15	140	2	629	Cont	0	133	0					
PM NO BUILD Queue	1	16	13	2	664	397	0	140	394					
PM BUILD Queue	1	16	13	2	671	402	0	140	399					

NOTE: Queue Lengths are in feet.
 Queue Lengths are 95th percentile confidence level.
 Queue Lengths are based on Synchro 10 (HCM6) methodology

The eastbound left and right turn lanes are both effectively at least 700 feet long since both lanes extend beyond the limits to which they are striped. The eastbound left turn lane extends into an existing center two-way left turn lane and the right turn lane extends into the existing outside thru lane. The eastbound thru lane queue is very short (two vehicles). When the eastbound queuing extends beyond the designated striped left and / or right turn lane, the traffic will still queue in such a manner to not block eastbound thru traffic, but it will queue through existing private driveways momentarily. Therefore, no recommendation is made for the eastbound left or right turn auxiliary lanes.

A similar situation exists for the dual westbound left turn lanes on Singer Blvd. The queuing a short distance beyond the striped dual left turn lanes will not block other westbound traffic.

The northbound left turn queuing is projected to spill into the northbound inside thru lane. There is an NM DOT messaging sign located in the median such that it precludes extending the existing northbound left turn lane by a substantial distance. It is positioned approximately 10 feet behind the existing median curb. Therefore, no recommendation is made.

#2 -I-25 N. Ramp / Jefferson St. – Pages A-85 thru A-112

The results of the analysis of the signalized intersection of the I-25 N. Ramp / Jefferson St. are summarized in the following table:

Intersection: 2 - I-25 N. Ramp / Jefferson St.

<u>2029 AM Peak Hour</u>					<u>2029 PM Peak Hour</u>				
(EXIST. GEOM.)					(EXIST. GEOM.)				
NO BUILD					NO BUILD				
Lanes LOS-Delay					Lanes LOS-Delay				
WB	L	2	D - 38.8	D - 38.9	L		D - 51.8	D - 52.1	
	T	2	D - 36.8	D - 36.9	T		D - 46.0	D - 46.3	
	R	1	D - 35.2	C - 24.8	R		C - 33.7	C - 33.5	
NB	L	1	A - 9.7	B - 11.9	L		D - 38.3	D - 39.2	
	T	2	A - 0.7	A - 0.7	T		A - 0.1	A - 0.1	
	R		A - 0.0	A - 0.0	R		A - 0.0	A - 0.0	
SB	L		A - 0.0	A - 0.0	L		A - 0.0	A - 0.0	
	T	2	B - 13.6	B - 14.9	T		C - 33.1	D - 41.9	
	R	1	B - 13.9	B - 15.2	R		E - 55.2	E - 75.7	
Intersection:		B - 14.1	B - 14.7			D - 35.7	D - 42.0		
Note: ">" designates a shared right or left turn lane.									
No Recommendation.									

The 2029 analysis of the intersection of the I-25 N. Ramp / Jefferson St. demonstrates that the overall intersection delays will be acceptable for all conditions analyzed in this report. The implementation of the proposed development increases the delay at the intersection by 0.6 seconds during the AM Peak Hour and by 6.3 seconds during the PM Peak Hour. Therefore, no recommendations are made for the intersection of the I-25 N. Ramp / Jefferson St.

The 95th Percentile Queuing calculation (HCM 6 methodology) results based on the horizon year analysis are summarized in the following table:

Queueing Analysis Summary Sheet

Project: **Maverik Convenience Store (I-25 / Jefferson St.)**

Intersection: **I-25 N. Ramp / Jefferson St.**

2029											
Approach	Left Turns			Thru Movements			Right Turns				
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
Existing Lane Length	2	258	400	2	323	Cont	1	140	320		
AM NO BUILD Queue	2	272	236	2	341	241	1	148	166		
AM BUILD Queue	2	284	241	2	341	246	1	148	166		
Existing Lane Length	2	362	400	2	491	Cont	1	47	320		
PM NO BUILD Queue	2	382	356	2	518	351	1	50	51		
PM BUILD Queue	2	390	361	2	518	358	1	50	51		
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
Existing Lane Length	1	277	140	2	0	Cont	0	0	0		
AM NO BUILD Queue	1	295	108	2	1,227	10	0	0	0		
AM BUILD Queue	1	332	125	2	1,237	10	0	0	0		
Existing Lane Length	1	383	140	2	0	Cont	0	0	0		
PM NO BUILD Queue	1	408	335	2	607	3	0	0	0		
PM BUILD Queue	1	437	346	2	615	3	0	0	0		
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
Existing Lane Length	0	0	0	2	0	Cont	1	235	370		
AM NO BUILD Queue	0	0	0	2	603	195	1	248	166		
AM BUILD Queue	0	0	0	2	613	207	1	248	177		
Existing Lane Length	0	0	0	2	0	Cont	1	615	370		
PM NO BUILD Queue	0	0	0	2	1,318	550	1	649	684		
PM BUILD Queue	0	0	0	2	1,325	614	1	649	783		

NOTE: Queue Lengths are in feet.

Queue Lengths are 95th percentile confidence level.

Queue Lengths are based on Synchro 10 (HCM6) methodology.

The northbound left turn queuing and the southbound right turn queuing are projected to spill into the adjacent thru lanes and, in fact, currently experience the spill-over, especially during the PM Peak Hour period. Neither the northbound left turn lane nor the southbound right turn lane can be extended due to existing field constraints. The northbound left turn lane length cannot be extended in that it would shorten the existing length of the complimentary southbound left turn lane at the I-25 S. Ramp. The southbound right turn lane length cannot be extended due to the presence of an existing private driveway located approximately 550 feet north of the signalized intersection of the I-25 N. Ramp / Jefferson St. (centerline to centerline). Therefore, no recommendation is made.

#3 –I-25 S. Ramp / Jefferson St. – Pages A-85 thru A-112

The results of the analysis of the signalized intersection of the I-25 S. Ramp / Jefferson St. are summarized in the following table:

Intersection: 3 - I-25 S. Ramp / Jefferson St.

<u>2029 AM Peak Hour</u>						<u>2029 PM Peak Hour</u>					
(EXIST. GEOM.)						(EXIST. GEOM.)					
NO BUILD			BUILD			NO BUILD			BUILD		
Lanes		LOS-Delay	Lanes		LOS-Delay	Lanes		LOS-Delay	Lanes		LOS-Delay
EB	L	2	C - 28.2	2	C - 28.1	L	2	D - 41.8	2	D - 41.6	
	T	2	C - 32.9	2	C - 32.7	T	2	D - 38.1	2	D - 38.0	
	R	1	C - 29.1	1	C - 30.5	R	1	C - 31.4	1	C - 32.6	
NB	L		A - 0.0	0	A - 0.0	L	0	A - 0.0	0	A - 0.0	
	T	2	B - 19.6	2	C - 20.9	T	2	C - 28.5	2	C - 30.0	
	R	>	B - 19.8	>	C - 21.1	R	>	C - 29.0	>	C - 30.6	
SB	L	1	B - 12.3	1	B - 13.4	L	1	B - 16.4	1	B - 16.9	
	T	2	A - 0.3	2	A - 0.3	T	2	A - 0.2	2	A - 0.1	
	R		A - 0.0	0	A - 0.0	R	0	A - 0.0	0	A - 0.0	
Intersection:		B - 19.3		B - 19.9		C - 23.6		C - 24.1			
Note: ">" designates a shared right or left turn lane.											
No Recommendation.											

The 2029 analysis of the intersection of the I-25 S. Ramp / Jefferson St. demonstrates that the delays will be acceptable for all conditions analyzed in this report. Therefore, no recommendations are made for the intersection of the I-25 S. Ramp / Jefferson St.

The 95th Percentile Queuing calculation (HCM 6 methodology) results based on the horizon year analysis are summarized in the following table:

Queueing Analysis Summary Sheet

Project: Maverik Convenience Store (I-25 / Jefferson St.)
 Intersection: I-25 S. Ramp / Jefferson St.

2029											
Approach		Left Turns			Thru Movements			Right Turns			
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length		
Existing Lane Length	2	760	300+	2	304	Cont	1	177	340		
AM NO BUILD Queue	2	802	200	2	321	317	1	187	192		
AM BUILD Queue	2	802	200	2	321	317	1	226	230		
Existing Lane Length	2	480	300+	2	654	Cont	1	208	340		
PM NO BUILD Queue	2	506	420	2	690	420	1	219	220		
PM BUILD Queue	2	506	417	2	690	420	1	245	253		
Northbound		# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	
Existing Lane Length	0	0	0	2	682	Cont	0	203	0		
AM NO BUILD Queue	0	0	0	2	720	351	0	214	343		
AM BUILD Queue	0	0	0	2	767	381	0	226	376		
Existing Lane Length	0	0	0	2	482	Cont	0	356	0		
PM NO BUILD Queue	0	0	0	2	509	402	0	376	374		
PM BUILD Queue	0	0	0	2	546	435	0	385	404		
Southbound		# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	
Existing Lane Length	1	101	190	2	464	Cont	0	0	0		
AM NO BUILD Queue	1	108	49	2	495	3	0	0	0		
AM BUILD Queue	1	108	49	2	518	5	0	0	0		
Existing Lane Length	1	301	190	2	935	Cont	0	0	0		
PM NO BUILD Queue	1	321	120	2	997	3	0	0	0		
PM BUILD Queue	1	321	110	2	1,012	0	0	0	0		

NOTE: Queue Lengths are in feet.

Queue Lengths are 95th percentile confidence level.

Queue Lengths are based on Synchro 10 (HCM6) methodology.

The eastbound left turn lanes' queuing is calculated to extend beyond the limits to which the lanes are striped. However, the extended queue will be contained in the upstream thru lanes without blocking thru traffic since the gore point of the ramp is located approximately 800+ feet west of the eastbound stop bar for the I-25 S. Ramp. Therefore, no recommendation is made.

#4 –McLeod Rd. / Jefferson St. – Pages A-85 thru A-112

The results of the analysis of the signalized intersection of the McLeod Rd. / Jefferson St. are summarized in the following table:

Intersection: 4 - McLeod Rd. / Jefferson St.

<u>2029 AM Peak Hour</u>						<u>2029 PM Peak Hour</u>					
		(EXIST. GEOM.)						(EXIST. GEOM.)			
		NO BUILD		BUILD				NO BUILD		BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay			Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	1	C - 20.7	1	C - 21.4	L	1	C - 23.9	1	C - 23.5	
	T	1	C - 20.6	1	C - 21.1	T	1	C - 24.8	1	C - 24.3	
	R	>	C - 20.6	>	C - 21.1	R	>	C - 24.8	>	C - 24.3	
WB	L	1	C - 23.9	1	C - 24.4	L	1	C - 29.3	1	C - 28.6	
	T	1	B - 20.0	1	C - 20.5	T	1	C - 23.3	1	C - 22.9	
	R	1	C - 21.4	1	C - 22.2	R	1	B - 19.3	1	B - 19.2	
NB	L	1	B - 12.4	1	B - 17.0	L	1	B - 11.1	1	B - 13.6	
	T	2	C - 20.1	2	C - 28.5	T	2	B - 19.0	2	C - 23.8	
	R	>	C - 20.1	>	C - 28.4	R	>	B - 19.1	>	C - 23.9	
SB	L	1	B - 13.0	1	C - 23.2	L	1	B - 15.8	1	D - 42.8	
	T	2	B - 15.7	2	B - 18.9	T	2	B - 12.9	2	B - 15.4	
	R	>	B - 15.7	>	B - 18.9	R	>	B - 12.9	>	B - 15.4	
Intersection:		B - 18.6			C - 23.3			B - 17.4			C - 24.5

Note: ">" designates a shared right or left turn lane.
No recommendation.

The 2029 analysis of the intersection of the McLeod Rd. / Jefferson St. demonstrates that the delays will be acceptable for all conditions analyzed in this report. Therefore, no recommendations are made for the intersection of the McLeod Rd. / Jefferson St.

The 95th Percentile Queuing calculation (HCM 6 methodology) results based on the horizon year analysis are summarized in the following table:

Queueing Analysis Summary Sheet

Project: **Maverik Convenience Store (I-25 / Jefferson St.)**
 Intersection: **McLeod Rd. / Jefferson St.**

2029										
Approach		Left Turns			Thru Movements			Right Turns		
Eastbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	
Existing Lane Length	1	10	75	1	46	Cont	0	17	0	
AM NO BUILD Queue	1	11	5	1	49	0	0	18	51	
AM BUILD Queue	1	15	13	1	49	0	0	18	56	
Existing Lane Length	1	13	75	1	66	Cont	0	25	0	
PM NO BUILD Queue	1	14	10	1	70	0	0	26	72	
PM BUILD Queue	1	17	13	1	70	0	0	26	74	
Westbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	
Existing Lane Length	1	88	150	1	29	Cont	1	367	250	
AM NO BUILD Queue	1	93	82	1	31	23	1	387	305	
AM BUILD Queue	1	93	90	1	31	26	1	467	394	
Existing Lane Length	1	102	150	1	12	Cont	1	327	250	
PM NO BUILD Queue	1	108	90	1	13	10	1	345	225	
PM BUILD Queue	1	108	92	1	13	10	1	399	276	
Northbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	
Existing Lane Length	1	17	75	2	442	Cont	0	25	0	
AM NO BUILD Queue	1	18	10	2	466	197	0	26	202	
AM BUILD Queue	1	18	13	2	538	279	0	26	287	
Existing Lane Length	1	10	75	2	468	Cont	0	106	0	
PM NO BUILD Queue	1	11	5	2	494	202	0	112	202	
PM BUILD Queue	1	11	5	2	543	253	0	112	253	
Southbound	# Lanes	Vol.	Length	# Lanes	Vol.	Length	# Lanes	Vol.	Length	
Existing Lane Length	1	205	400	2	372	Cont	0	25	0	
AM NO BUILD Queue	1	216	120	2	392	146	0	26	148	
AM BUILD Queue	1	292	230	2	461	205	0	30	210	
Existing Lane Length	1	401	400	2	626	Cont	0	8	0	
PM NO BUILD Queue	1	423	197	2	660	172	0	8	179	
PM BUILD Queue	1	484	374	2	715	215	0	11	223	

NOTE: Queue Lengths are in feet.

Queue Lengths are 95th percentile confidence level.

Queue Lengths are based on Synchro 10 (HCM6) methodology.

All of the existing auxiliary left and right turn lanes at this intersection are demonstrated to be of adequate length to contain the calculated 95th Percentile queue lengths. Therefore, no recommendation is made.

#5 – Outback Dr. / Jefferson St. – Pages A-85 thru A-112

The results of the analysis of the unsignalized intersection of Outback Dr. / Jefferson St. are summarized in the following table:

Intersection: 5 - Outback Driveway / Jefferson St.

<u>2029 AM Peak Hour</u>						<u>2029 PM Peak Hour</u>					
(EXIST. GEOM.)											
NO BUILD						BUILD					
		Lanes	LOS-Delay	Lanes	LOS-Delay			Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	>	B - 13.4	>	C - 21.7	L	>	C - 16.8	>	D - 25.1	
	T	1	A - 0.0	1	A - 0.0	T	1	A - 0.0	1	A - 0.0	
	R	>	B - 13.4	>	C - 21.7	R	>	C - 16.8	>	D - 25.1	
NB	L	>	A - 8.3	>	A - 8.6	L	>	A - 9.4	>	A - 9.9	
	T	2	A - 0.1	2	A - 0.1	T	2	A - 0.2	2	A - 0.3	
	R		A - 0.0	0	A - 0.0	R	0	A - 0.0	0	A - 0.0	
SB	L		A - 0.0	0	A - 0.0	L	0	A - 0.0	0	A - 0.0	
	T	2	A - 0.0	2	A - 0.0	T	2	A - 0.0	2	A - 0.0	
	R	>	A - 0.0	>	A - 0.0	R	>	A - 0.0	>	A - 0.0	
Intersection:		u - 0.1		u - 0.1		u - 0.3		u - 0.4			
Note: ">" designates a shared right or left turn lane.											
No Recommendation.											

The 2029 analysis of the intersection of Outback Dr. / Jefferson St. demonstrates that the delays will be acceptable for all conditions analyzed in this report. Also, calculated 95th Percentile Queuing at this intersection is not projected to 1 vehicle for any turning movement. (See Appendix Pages A-96 and A-110). Therefore, no recommendations are made for the intersection of Outback Dr. / Jefferson St.

#6 – Driveway "A" / Jefferson St. - Pages A-85 thru A-112

The results of the 2029 analyses of the unsignalized intersection of Driveway "A" / Jefferson St. are summarized in the following table:

Intersection: 6 - Driveway "A" / Jefferson St.

2029 AM Peak Hour						2029 PM Peak Hour					
		(EXIST. GEOM.)						(EXIST. GEOM.)			
		NO BUILD		BUILD				NO BUILD		BUILD	
		Lanes	LOS-Delay	Lanes	LOS-Delay			Lanes	LOS-Delay	Lanes	LOS-Delay
EB	L	1	A - 0.0	1	A - 0.0	L	1	A - 0.0	1	F - 79.2	
	T	1	A - 0.0	1	A - 0.0	T	1	A - 0.0	1	C - 16.3	
	R	>	A - 0.0	>	A - 0.0	R	>	A - 0.0	>	C - 16.3	
WB	L	>	D - 31.5	>	E - 40.3	L	>	C - 19.4	>	C - 23.4	
	T	1	D - 31.5	1	A - 0.0	T	1	C - 19.4	1	C - 23.4	
	R	>	D - 31.5	>	E - 40.3	R	>	C - 19.4	>	C - 23.4	
NB	L	>	A - 8.2	>	A - 0.0	L	>	A - 9.0	>	A - 9.4	
	T	2	A - 0.0	2	A - 0.0	T	2	A - 0.0	2	A - 0.4	
	R	>	A - 0.0	>	A - 0.0	R	>	A - 0.0	>	A - 0.0	
SB	L	>	B - 11.5	>	B - 11.9	L	>	B - 10.4	>	B - 10.4	
	T	2	A - 0.7	2	A - 0.8	T	2	A - 0.9	2	A - 1.0	
	R	1	A - 0.0	1	A - 0.0	R	1	A - 0.0	1	A - 0.0	
Intersection:		u - 1.7		u - 1.9		u - 1.2		u - 3.2			
Note: ">" designates a shared right or left turn lane.											
No Recommendation.											

The 2029 analysis of the intersection of Driveway "A" / Jefferson St. demonstrates that the delays will be acceptable for all conditions analyzed in this report except for the eastbound (exiting) left turn movement. Therefore, no recommendations are made for the intersection of Driveway "A" / Jefferson St.

Driveway "A" is located approximately 275 feet southeast of the I-25 S. Ramp / Jefferson St. signalized intersection. It has historically been a full access unsignalized driveway since the mid-1990's. It was aligned with an existing full-access unsignalized driveway across the street that accesses an existing Holiday Inn & Suites Motel and a NAPA Truck Part and Service facility. Driveway "A" into the Maverik Store is being restricted to a right-in only driveway since the New Mexico Department of Transportation has an access control line in the middle of Jefferson St. that extends through the driveway, thus prohibiting left-in and left-out traffic.

#7 – Driveway "B" / Jefferson St. - Pages A-85 thru A-112

The results of the 2029 analyses of the full access unsignalized intersection of Driveway "B" / Jefferson St. are summarized in the following table:

Intersection: 7 - Driveway "B" / Jefferson St.

2029 AM Peak Hour BUILD						2029 PM Peak Hour BUILD					
(EXIST. GEOM.)						(EXIST. GEOM.)					
NO BUILD			BUILD			NO BUILD			BUILD		
Lanes		LOS-Delay	Lanes		LOS-Delay	Lanes		LOS-Delay	Lanes		LOS-Delay
EB	L	> A - 0.0	>	F - 299	L	> A - 0.0	>	A - 0.0	>	A - 0.0	
	T	1 A - 0.0	>	F - 299	T	1 A - 0.0	>	A - 0.0	>	A - 0.0	
	R	> A - 0.0	>	F - 299	R	> A - 0.0	>	A - 0.0	>	A - 0.0	
NB	L	> A - 0.0	>	A - 9.0	L	> A - 0.0	>	E - 36.9	>	E - 36.9	
	T	2 A - 0.0	>	A - 1.5	T	2 A - 0.0	>	A - 0.0	>	A - 0.0	
	R	> A - 0.0	>	A - 0.0	R	> A - 0.0	>	E - 36.9	>	E - 36.9	
SB	L	> A - 0.0	>	A - 0.0	L	> A - 0.0	>	B - 10.7	>	B - 10.7	
	T	2 A - 0.0	>	A - 0.0	T	2 A - 0.0	>	A - 1.0	>	A - 1.0	
	R	> A - 0.0	>	A - 0.0	R	> A - 0.0	>	A - 0.0	>	A - 0.0	
Intersection:		u - 0.0		u - 33.7		u - 0.0		u - 1.6			
Note: ">" designates a shared right or left turn lane.											
No Recommendation.											

Driveway "B" is located approximately 150 feet south of Driveway "A" and approximately 450 feet south of the I-25 northbound off-ramp. The 2029 analysis of the intersection of Driveway "B" / Jefferson St. demonstrates that the delays will be excessive during the 2019 AM and 2019 PM Peak Hour BUILD Conditions. Restricting Driveway "A" to prevent exiting traffic (especially left-out movements) has forced all exiting traffic from this development to Driveway "B". It is anticipated that there will be long delays and long queues for exiting traffic in Driveway "B". To lessen the problem, it is recommended that Driveway "B" incorporate two exiting lanes – one for left turn movements and one for right turn movements. As the property to the south develops, it would be beneficial to plan for cross-access so that Maverik traffic can access Outback Dr. to relieve congestion at Driveway "B".

Impact Assessment

Generally speaking, the Jefferson / I-25 Interchange area is congested during the AM Peak Hour and PM Peak Hour periods. The calculated and actual delays are significant, but not as bad as expected. Some of the queuing for certain turning movements at the ramps spill into the thru lanes, thus making the delays seem worse than the calculated values would seem to indicate. The queuing capacity, especially for the northbound left turn movement at the I-25 N. Ramp and the complementary southbound left turn movement at the I-25 S. Ramp are substandard and cannot be lengthened as a result of the inherent design of the tight diamond interchange. The proposed development will have minimal adverse impact on the adjacent

transportation system. All the levels-of-service were determined to be acceptable for the overall intersections.

Access Design Specifications

Sight distance at Driveway “A” and at Driveway “B” are adequate. The Maverik driveways are both along the inside of a horizontal curve in Jefferson St. but considering the posted speed limit of 35 MPH in this area, the sight distances are sufficient.

There is an existing southbound right turn deceleration lane (about 60 feet long plus transition) on Jefferson St. at Driveway “A”. The right turn deceleration lane will be extended a bit when the driveway is relocated approximately 35 feet to the south.

Driveway “B” is located on Jefferson St. outside of the I-25 / Jefferson interchange access control area. Driveway “A” is located within the I-25 / Jefferson interchange access control area (with the access control line located in the center of Jefferson St.) so that left turns in and out are prohibited. The detailed design and construction of driveways should comply with the Development Process Manual and the City design policy for driveways consistent with the Traffic Engineer in the Transportation Development Section of the City of Albuquerque Planning Department.

Summary of Deficiencies, Anticipated Impacts, and Recommendations

Neither the 2019 (Implementation Year) nor the 2029 (Horizon Year) analyses determined any significant deficiencies in the adjacent transportation system. The Jefferson St. / I-25 Interchange was studied as a part of the North I-25 Phase 1A Final Report w/Appendix. With regard to the Jefferson / I-25 Interchange, the Report states:

Jefferson Street

The existing interchange at Jefferson Street consists of a standard diamond. Notable aspects of the existing interchange to consider in the development of improvement alternatives include:

- The existing bridge is relatively new, but is too narrow to provide the capacity that is needed. There is insufficient left-turn storage on the bridge.
- The bridge span is not wide enough to build continuous frontage roads along with providing an additional mainline lane on I-25.
- This interchange serves large retail developments in the southwest and northwest quadrants and provides the southern access to the North I-25 Business Center, which is one of the major activity centers in the Albuquerque region.

The New Mexico Department of Transportation is in the initial stages of considering options to solve existing traffic issues at the interchange. Under the North I-25 Phase 1A Report (Sheet 5-18), there are four options being considered:

- Alternative 1 - The standard diamond configuration is maintained, but the bridge would be widened to accommodate dual left turn bays in each direction
- Alternative 2 – Similar to Alternative 1.
- Alternative 3 - The standard diamond configuration is maintained, but the existing bridge is replaced with a new structure able to accommodate dual left turn bays and Texas U-turns for both northbound and southbound traffic. The new bridge structure would also accommodate continuous frontage roads which would provide a route to bypass the signalized intersections of Jefferson Street and the northbound and southbound frontage roads.
- Alternative 4 - A Diverging Diamond Interchange (DDI) layout was considered (see Sheet INT-3 in Appendix G), but without substantial right-of-way impacts, the geometry of a DDI would be undesirable.

The queuing issues at the Jefferson / I-25 Interchange are existing regional issues that should be addressed in the foreseeable future by constructing the recommended improvements as defined in the North I-25 Phase 1A Report.

The proposed Maverik Convenience Store does not contribute any additional traffic to the southbound left turn movement on Jefferson St. at the I-25 South Ramp nor to the southbound right turn movement on Jefferson St. at the I-25 North Ramp, two of the turning movements with the longest calculated queue lengths. The Maverik Convenience Store will only generate a small percentage of trips to the northbound left turn movement on Jefferson St. at the I-25 North Ramp.

Recommendations:

Implementation Year (2019) – Design and construction of all improvements including driveway modifications should preserve adequate sight distances along Jefferson St.

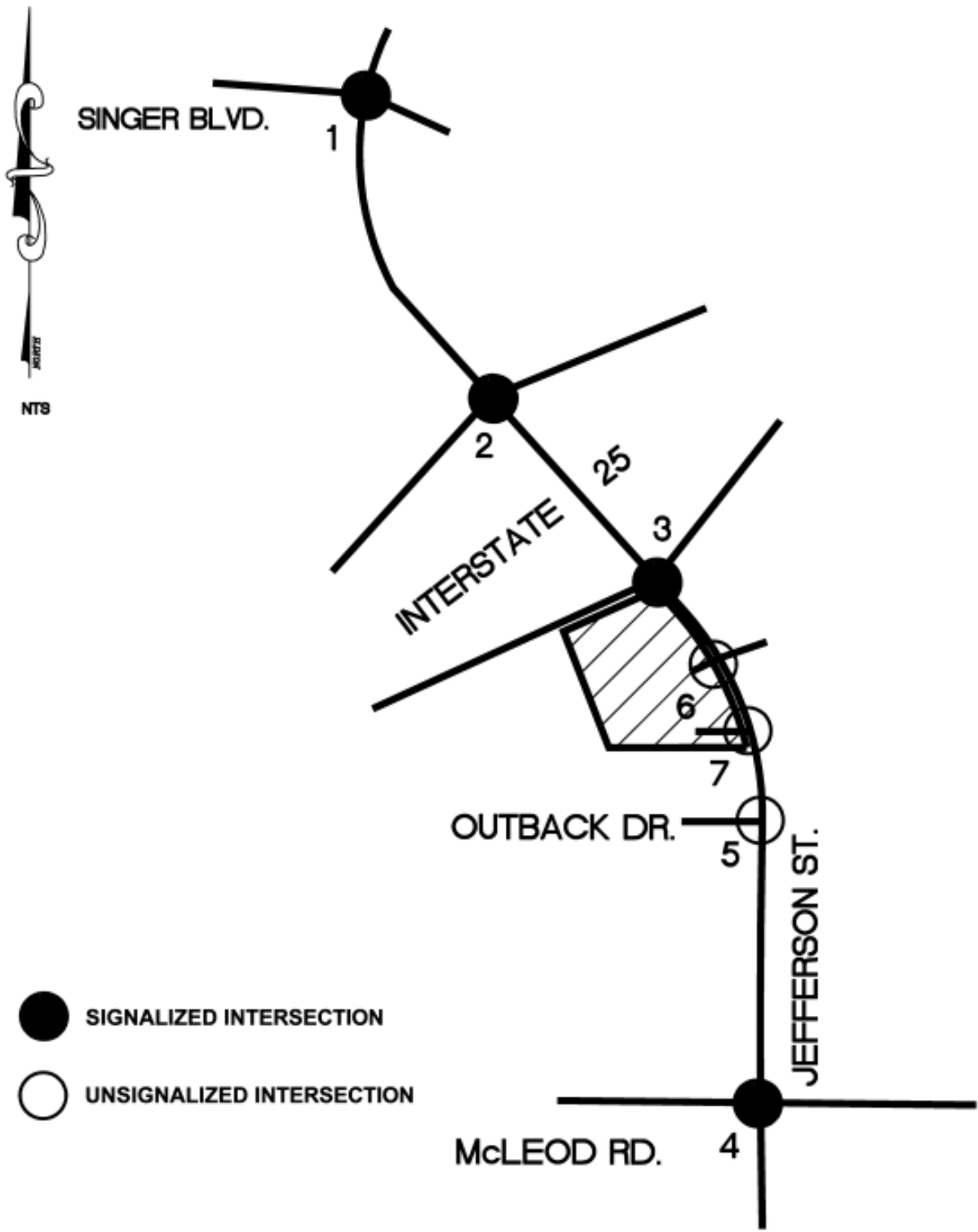
Driveway “A” should be designed and constructed as a right-turn-in only driveway.

Driveway “B” should be designed and constructed as a full-access unsignalized driveway with two exiting lanes (one for left turns and one for right turns) and one entering lane minimum.

Drive design should be able to accommodate large delivery trucks.

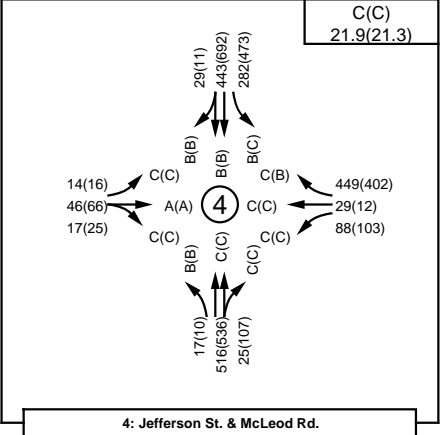
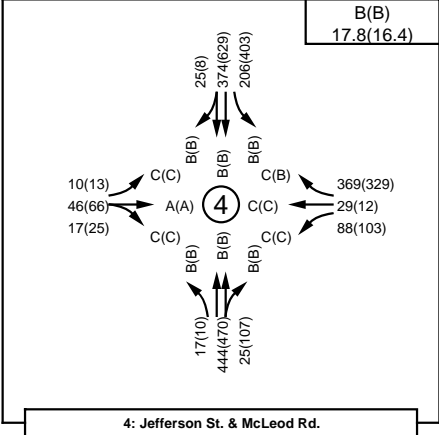
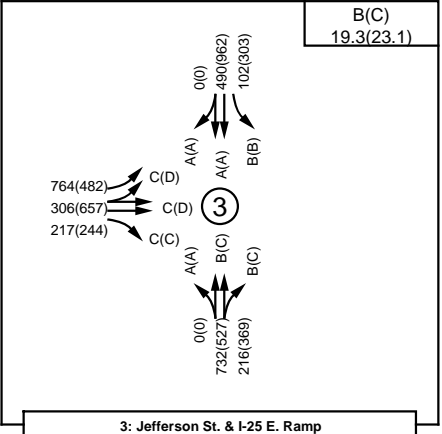
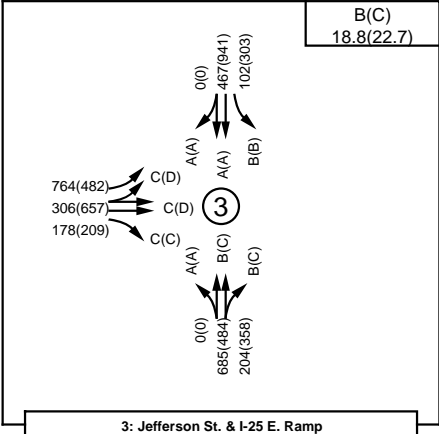
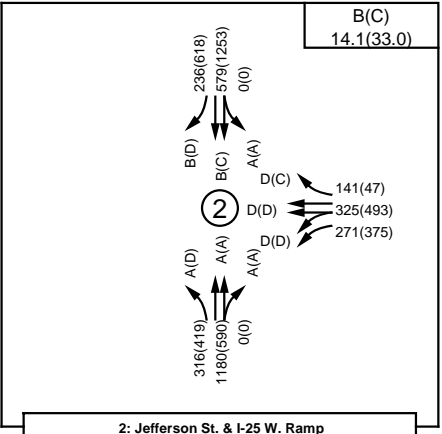
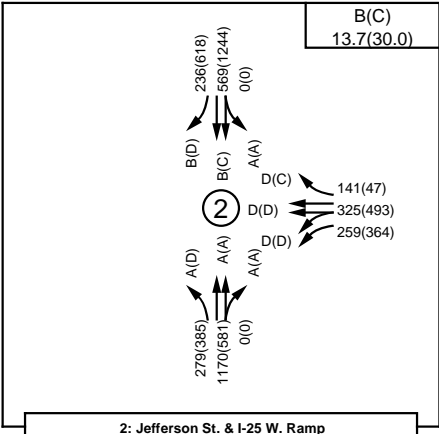
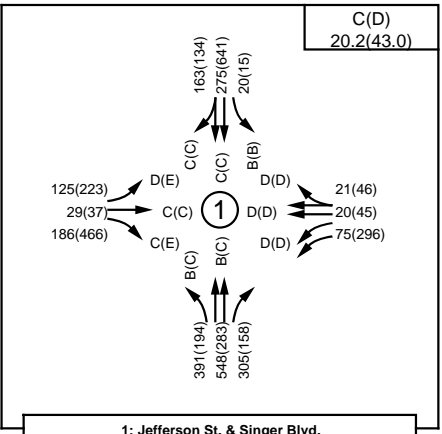
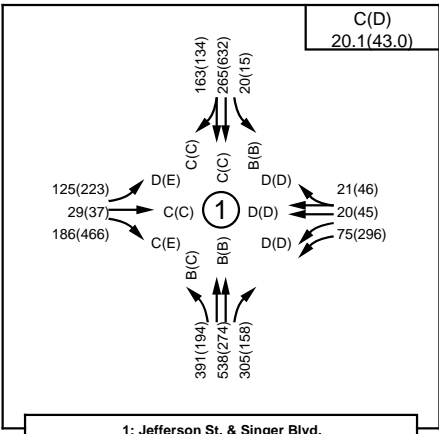
Horizon Year (2029) – Same recommendations as Implementation Year. Also, cross access should be incorporated when the property to the south develops to provide Maverik traffic access to Outback Dr. to relieve future congestion at Driveway “B”.

Maverik Convenience Store
(I-25 / Jefferson St.)
Roadway Network



2019 NO BUILD Conditions

2019 BUILD Conditions

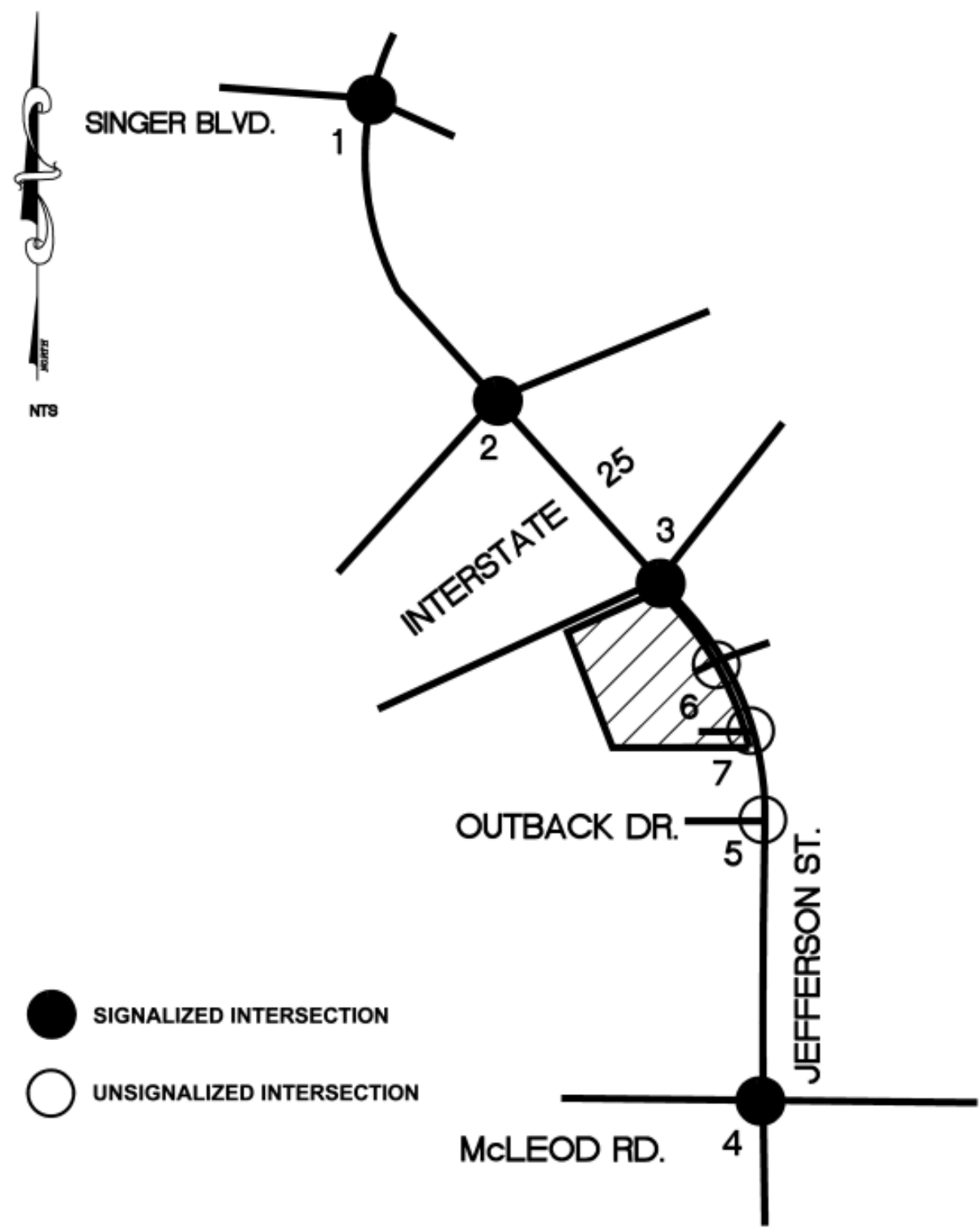


Maverik Convenience Store
(Jefferson St. / I-25)
LOS / Volume Analysis Map

AM(PM)

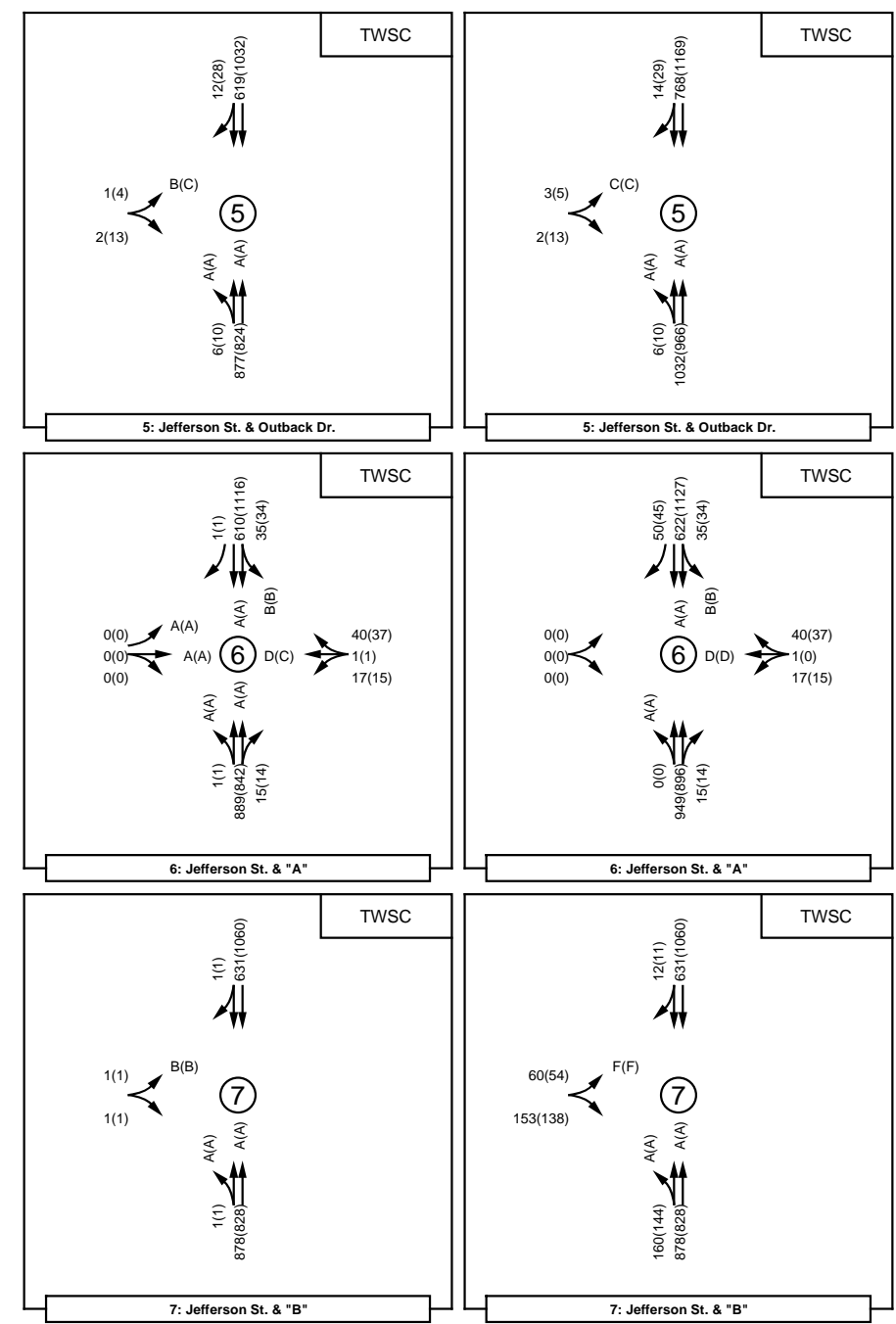
Maverik Convenience Store

(I-25 / Jefferson St.)
Roadway Network



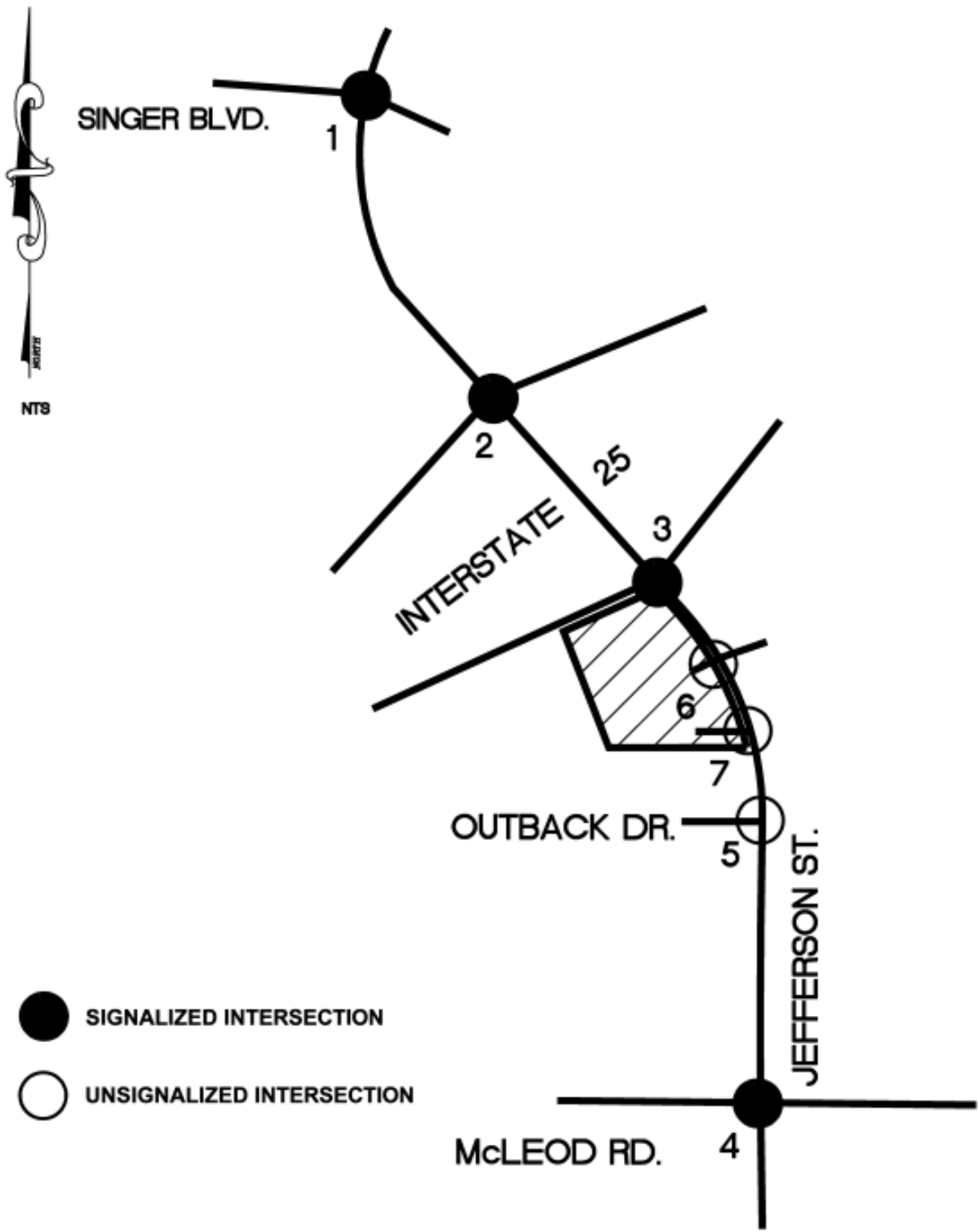
2019 NO BUILD Conditions

2019 BUILD Conditions



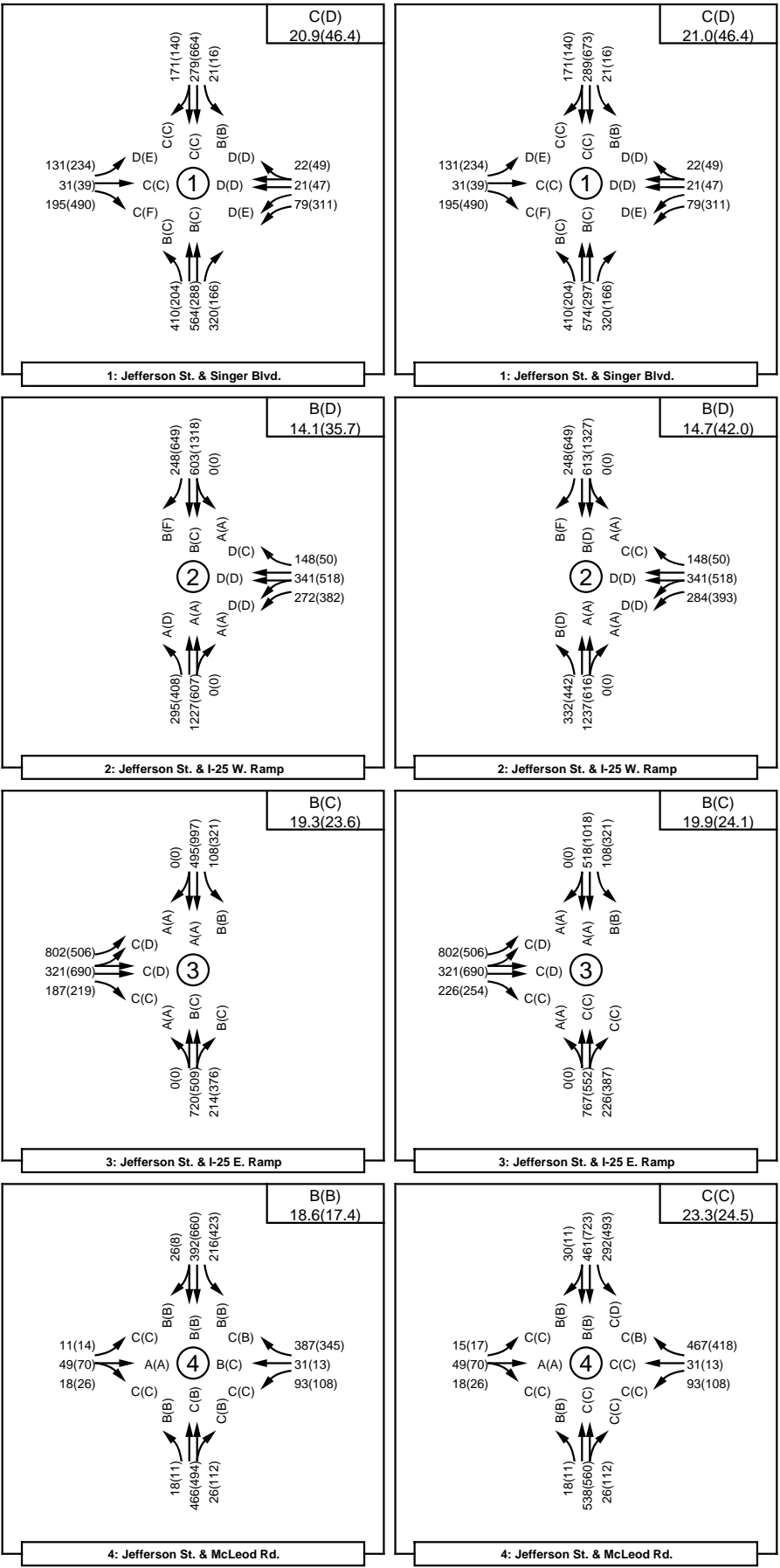
Maverik Convenience Store
Jefferson St. / I-25
LOS / Volume Analysis Map

Maverik Convenience Store
(I-25 / Jefferson St.)
Roadway Network



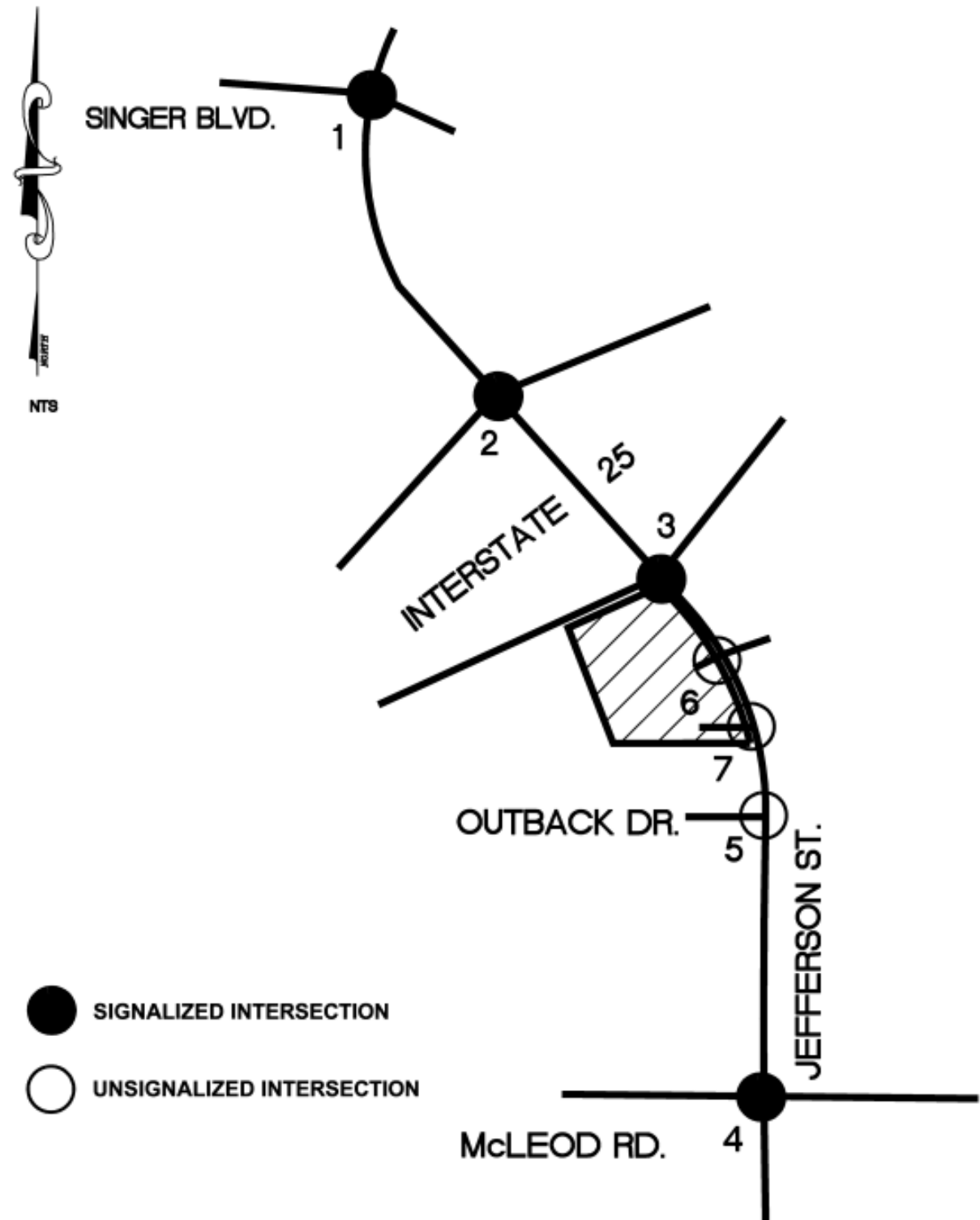
2029 NO BUILD Conditions

2029 BUILD Conditions



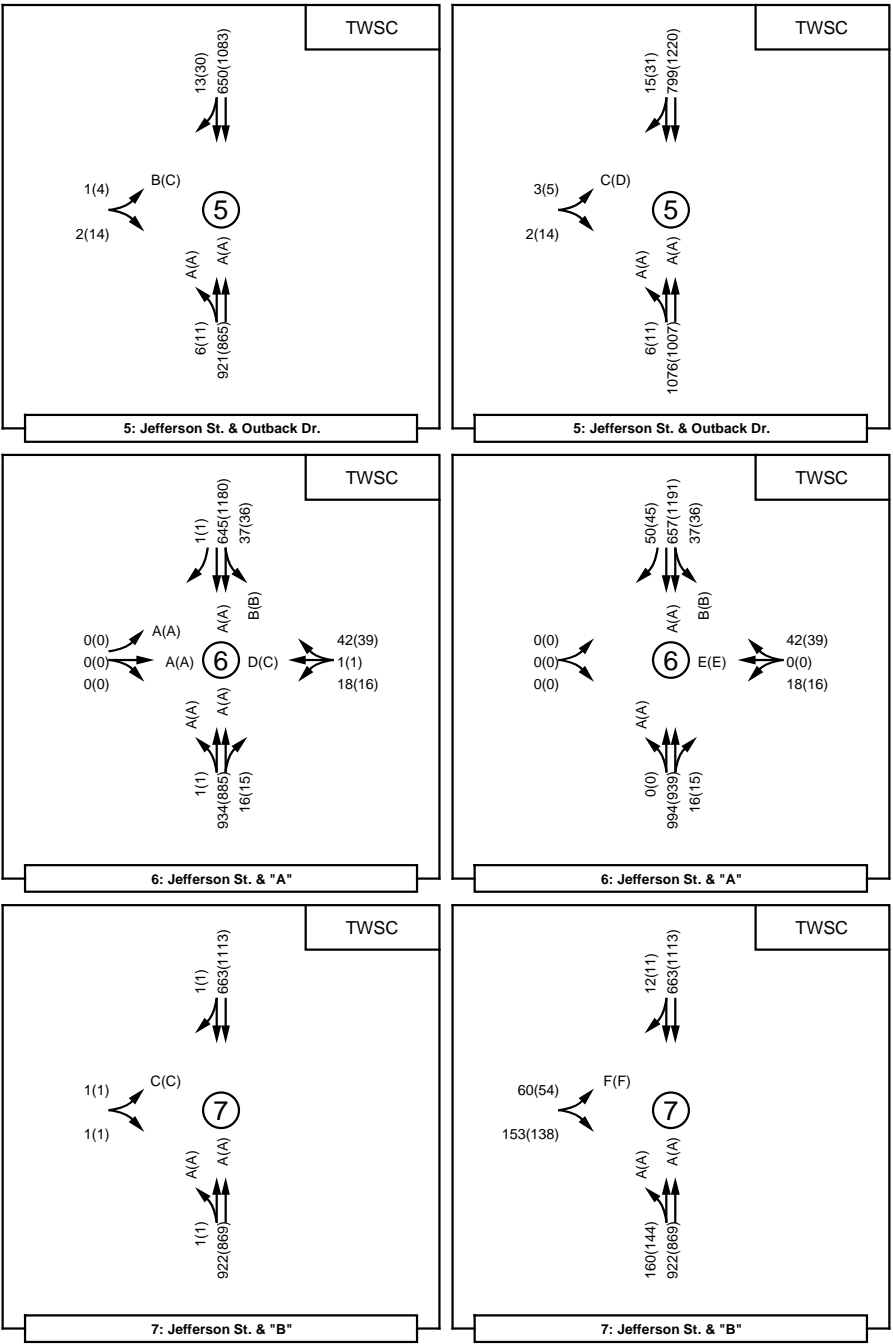
Maverik Convenience Store
(Jefferson St. / I-25)
LOS / Volume Analysis Map

Maverik Convenience Store
(I-25 / Jefferson St.)
Roadway Network



2029 NO BUILD Conditions

2029 BUILD Conditions

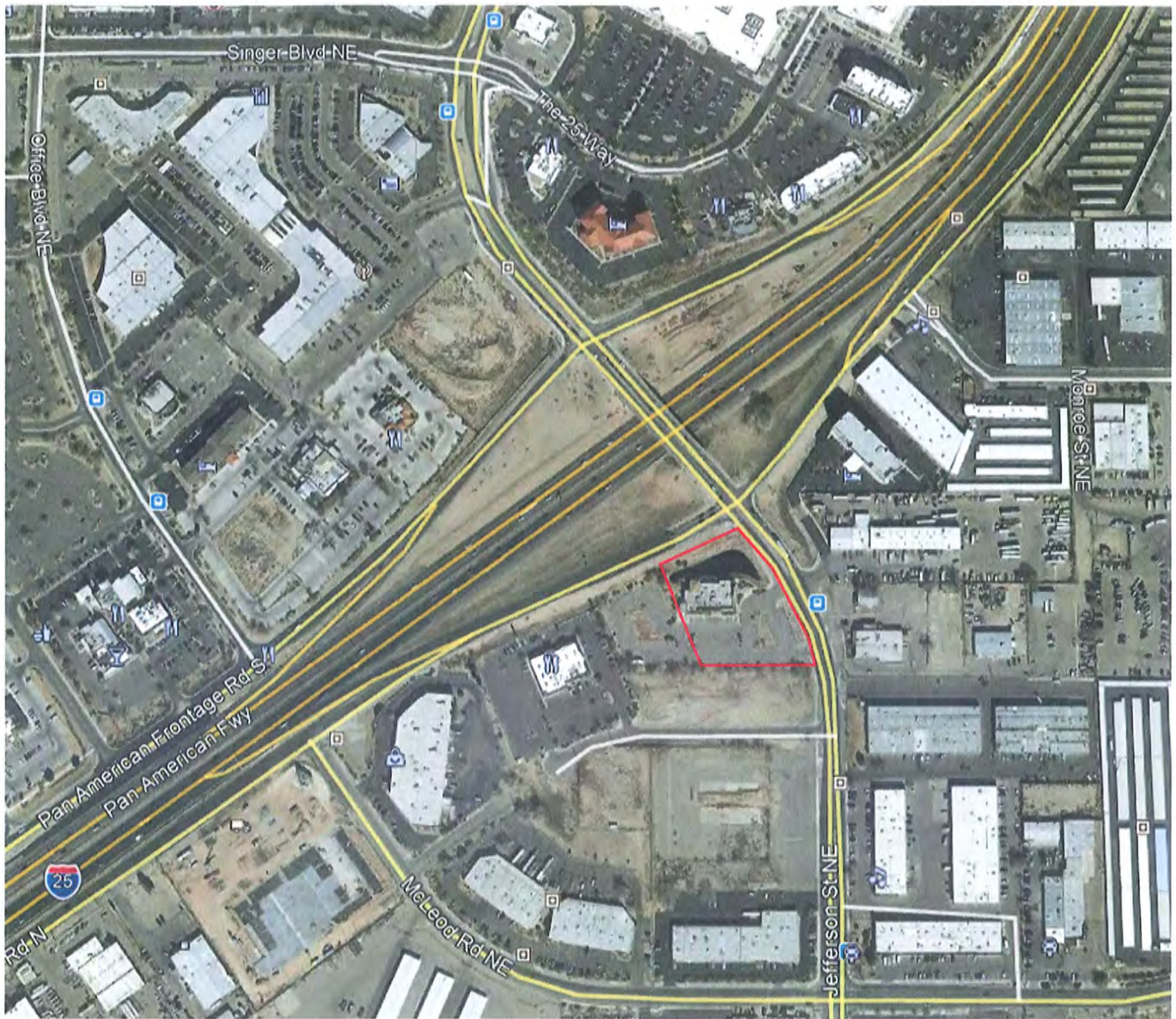


Maverik Convenience Store
(Jefferson St. / I-25)
LOS / Volume Analysis Map

Appendix

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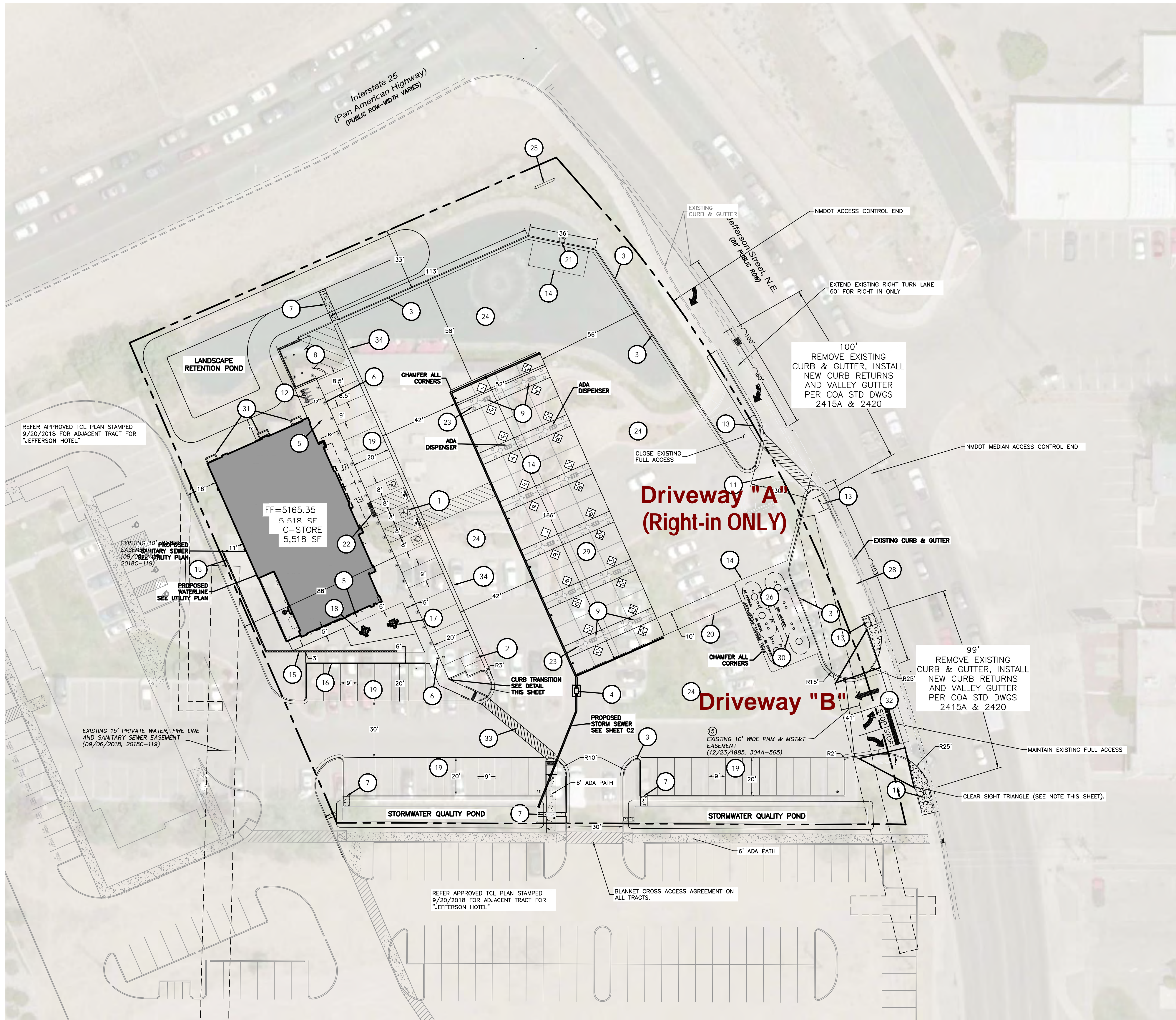
APPENDIX



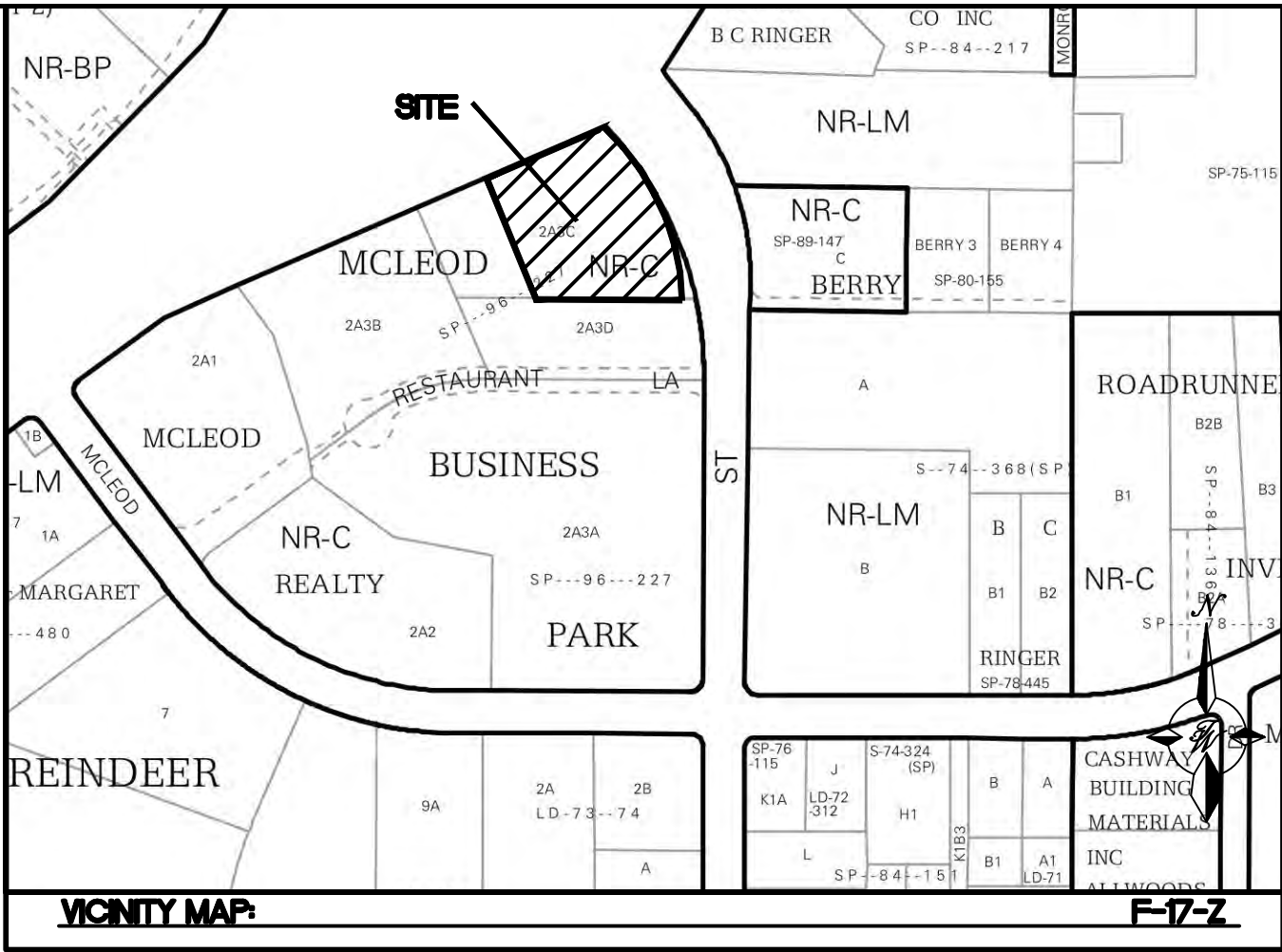
Maverik Convenience Store

(I-25 / Jefferson St.)

Vicinity Map



LEGEND	
	CURB & GUTTER
	BOUNDARY LINE
	EASEMENT
	CENTERLINE
	BUILDING
	SIDEWALK
	RETAINING WALL
	EXISTING STREET LIGHTS
	STRIPING
	EXISTING CURB & GUTTER
	EXISTING BOUNDARY LINE
	EXISTING SIDEWALK
	CONCRETE PAVERS



LEGAL DESCRIPTION:
TRACT 2-A-3-C-1 MCLEOD BUSINESS PARK

KEYED NOTES

- 1 ACCESSIBLE PARKING PER ADA STANDARDS WITH SIGN (SEE DETAIL SHT. C6)
- 2 MOTORCYCLE PARKING WITH SIGN (SEE DETAIL SHT. C6)
- 3 ON-SITE CURB & GUTTER (SEE DETAIL SHT. C6)
- 4 OIL WATER SEPARATOR (SEE DETAIL SHT. C8)
- 5 CONCRETE SIDEWALK (SEE DETAIL SHT. C7)
- 6 BOLLARDS (SEE DETAIL SHT. C7)
- 7 CONCRETE RUNDOWN
- 8 DUMPSTER (SEE DETAIL SHT. C8)
- 9 GAS PUMP ISLAND (TYP)
- 10 MAVERIK MONUMENT SIGN (SEE ARCH. PLANS)
- 11 NEW 30'-0" RIGHT-IN DRIVEWAY ENTRANCE
- 12 BICYCLE RACKS (SEE DETAIL SHT. C7)
- 13 UNIDIRECTIONAL ACCESSIBLE RAMP (SEE DETAIL SHT. C8)
- 14 CONCRETE SLAB W/CHAMFERED CORNERS
- 15 RETAINING WALL (SEE GRADING SHT C2, MAX HEIGHT 2.0')
- 16 HEADER CURB (SEE DETAIL SHT. C6)
- 17 ADA PICNIC TABLE (SEE ARCH. PLANS)
- 18 PICNIC TABLE (SEE ARCH. PLANS)
- 19 CONCRETE PARKING STALL (SEE DETAIL SHT. C7)
- 20 PETROLEUM TRENCH CAP SECTION (SEE DETAIL SHT. C6)
- 21 XACTAIR AIR STATION (SEE DETAIL SHT. C8)
- 22 TRUNCATED DOMES (SEE DETAIL SHT. C8)
- 23 "HOOP" BOLLARD (SEE DETAIL SHT. C7)
- 24 ASPHALT PAVING (SEE GEOTECH REPORT)
- 25 MAVERIK D/F ILLUMINATED PYLON SIGN (SEE ARCH. PLANS)
- 26 UNDERGROUND STORAGE FUEL TANKS (REFER MECH. PLANS)
- 27 SIDEWALK CULVERT COA STD DWG 2236
- 28 EXISTING 6' PUBLIC SIDEWALK
- 29 ALL UNDER CANOPY LIGHTING TO BE RECESSED
- 30 TANK PIT WALL TO BE LINED WITH GEOTEXTILE FILTER FABRIC PER XERXES TANK SPEC.
- 31 6', 28" HIGH LANDSCAPE PLANTER BOX
- 32 MODIFIED EXISTING FULL ACCESS DRIVEWAY
- 33 5' PEDESTRIAN CROSS WALK
- 34 2' CONCRETE WATERWAY (SEE DETAIL SHT. C6)

CLEAR SIGHT TRIANGLE NOTE:

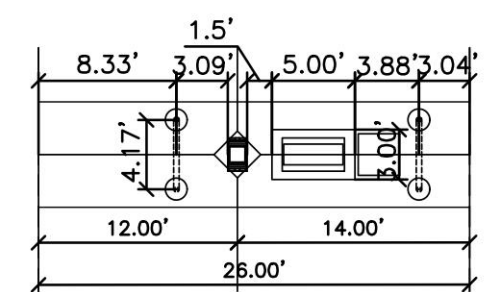
1. LANDSCAPING AND SIGNAGE WILL NOT INTERFERE WITH CLEAR SIGHT REQUIREMENTS. THEREFORE, SIGNS, WALLS, TREES, AND SHRUBBERY BETWEEN 3 AND 8 FEET TALL (AS MEASURED FROM THE GUTTER PAN) WILL NOT BE ACCEPTABLE IN THE CLEAR SIGHT TRIANGLE.

GENERAL NOTES:

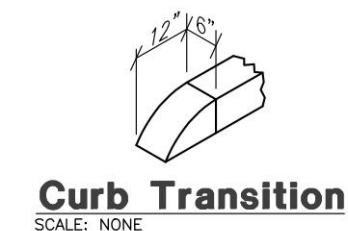
1. ALL BROKEN OR CRACKED SIDEWALK MUST BE REPLACED WITH SIDEWALK, CURB AND GUTTER AS REQUIRED PER COA STD DWG 2430 AND 2415A.
2. REFER ATTACHED DETAIL SHEETS FOR STD DWGS REFERENCED THIS PAGE.
3. REFER SITE SPECIFIC GRADING PLAN SHEET FOR ADA RAMP DETAILS AND ELEVATIONS.

SITE DATA:

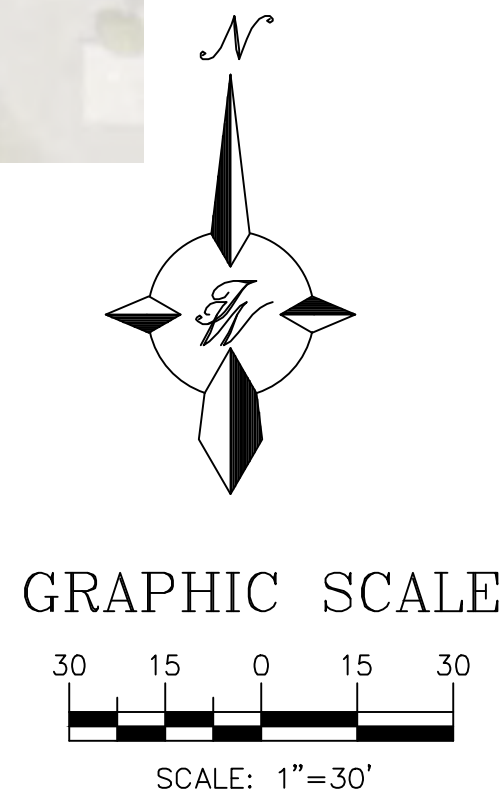
PROPOSED USAGE:	GAS & CONVENIENCE STORE
IDO CLASSIFICATION:	LIGHT VEHICLE FUELING STATION
LOT AREA:	94,950 SF (2.17 ACRES)
BUILDING AREA:	5,518 SF
STACK:	2X7x2 (28 UNITS)
ASPHALT AREA:	41,350 SF
PARKING REQUIRED:	22 SPACES (4 SPACES PER 1,000 SF)
PARKING PROVIDED:	48 SPACES
HC PARKING REQUIRED:	3 SPACES
HC PARKING PROVIDED:	3 SPACES (1 VAN ACCESSIBLE)
MC PARKING REQUIRED:	2 SPACES
MC PARKING PROVIDED:	2 SPACES
BICYCLE PARKING REQUIRED:	2 SPACES
BICYCLE PARKING PROVIDED:	4 SPACES
LANDSCAPE AREA REQUIRED:	13,405 SF
LANDSCAPE AREA PROVIDED:	24,201 SF



FUEL ISLAND LAYOUT
SCALE: NONE



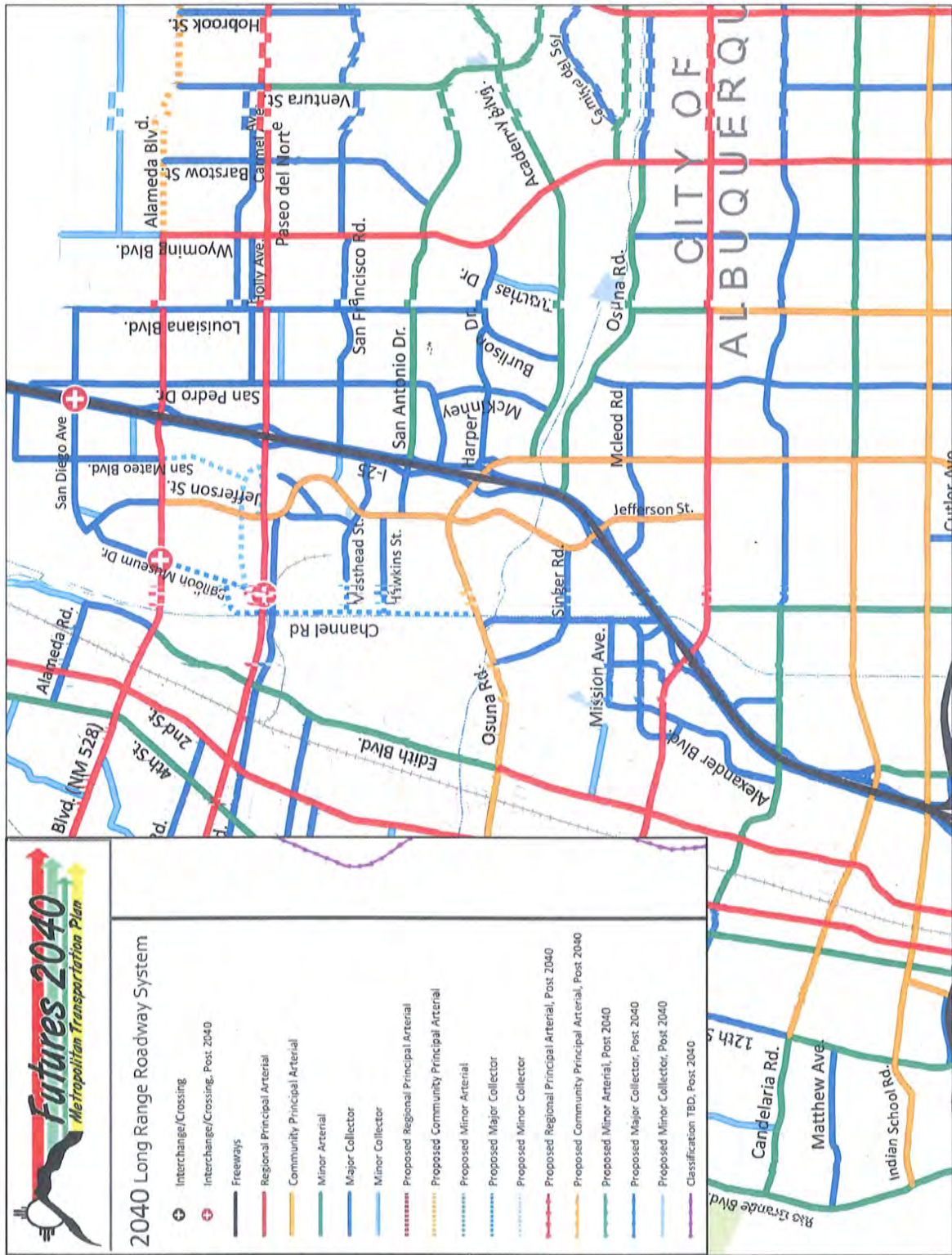
CURB TRANSITION
SCALE: NONE



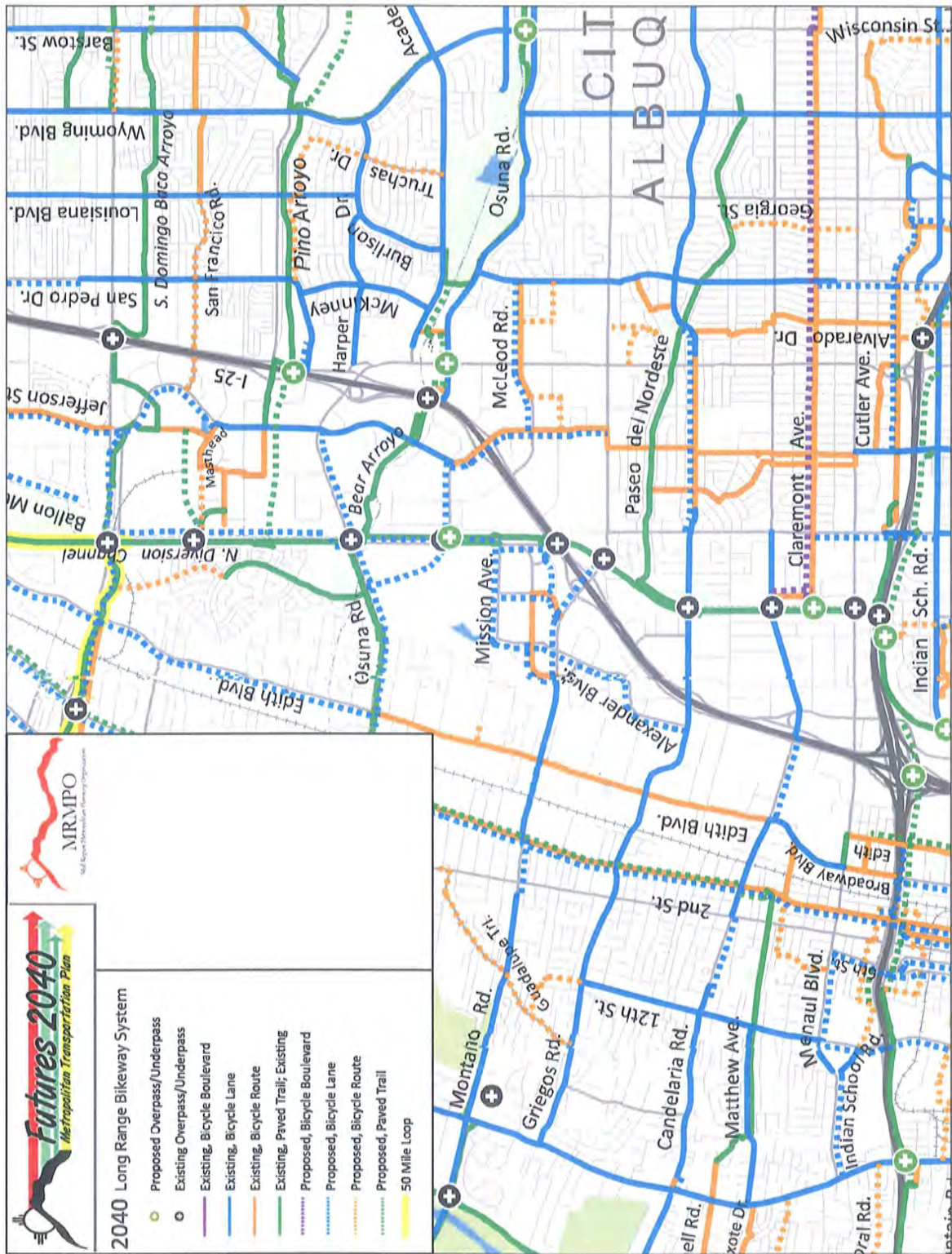
ENGINEER'S SEAL RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER 3/12/2019 RONALD R. BOHANNAN P.E. #7868	MAVERIK 5001 JEFFERSON ST. NE 87109 TRAFFIC CIRCULATION LAYOUT TERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858-3100 www.tierawestllc.com	DRAWN BY LA DATE 3/12/19 2018056-TCL SHEET # TCL 1 JOB # 2018056
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Portion of 2017 Traffic Flow Map
(from Mid-Region Council of Governments)



Portion of Futures 2040 Long Range Roadway System
(from Mid-Region Council of Governments)



Portion of Futures 2040 Long Range Bikeway System
(from Mid-Region Council of Governments)

Proposed C-Store (Jefferson St. / Interstate 25)
Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

COMMENT	USE (ITE CODE)	DESCRIPTION	24 HR VOL	A. M. PEAK HR.		P. M. PEAK HR.		
			GROSS	ENTER	EXIT	ENTER	EXIT	
Summary Sheet								
			Units					
Proposed		Gasoline / Service Station w/ Convenience Market (945)	28.00	6,356	222	213	200	192
Existing		Quality Restaurant (931)	10.00	538	4	4	52	26
Increase (Decrease) Trip Generation Rate				5,818	218	209	148	166

Proposed C-Store (Jefferson St. / Interstate 25) *Trip Generation Data (ITE Trip Generation Manual - 10th Edition)*

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR	
		ENTER	EXIT	ENTER	EXIT
Units					
Gasoline / Service Station w/ Convenience Market (945)					
	6,356	222	213	200	192
Fueling Positions					

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$T = 268.46 (X) + -1161$$

50% Enter, 50% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR)

$$T = 19 (X) + -96.53$$

51% Enter, 49% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

$$T = 13.99 (X) + 0$$

51% Enter, 49% Exit

Comments:
Proposed

Based on ITE Trip Generation Manual - 10th Edition

*Proposed C-Store (Jefferson St. / Interstate 25)
Trip Generation Data (ITE Trip Generation Manual - 10th Edition)*

USE (ITE CODE)	24 HOUR TWO-WAY VOLUME	A. M. PEAK HOUR		P. M. PEAK HOUR	
	GROSS	ENTER	EXIT	ENTER	EXIT
Quality Restaurant (931)	538	4	4	52	26
Units					
10.00					
1,000 S.F.					

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$T = \frac{53.84 (X) + 0}{50\% \text{ Enter, } 50\% \text{ Exit}}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR)

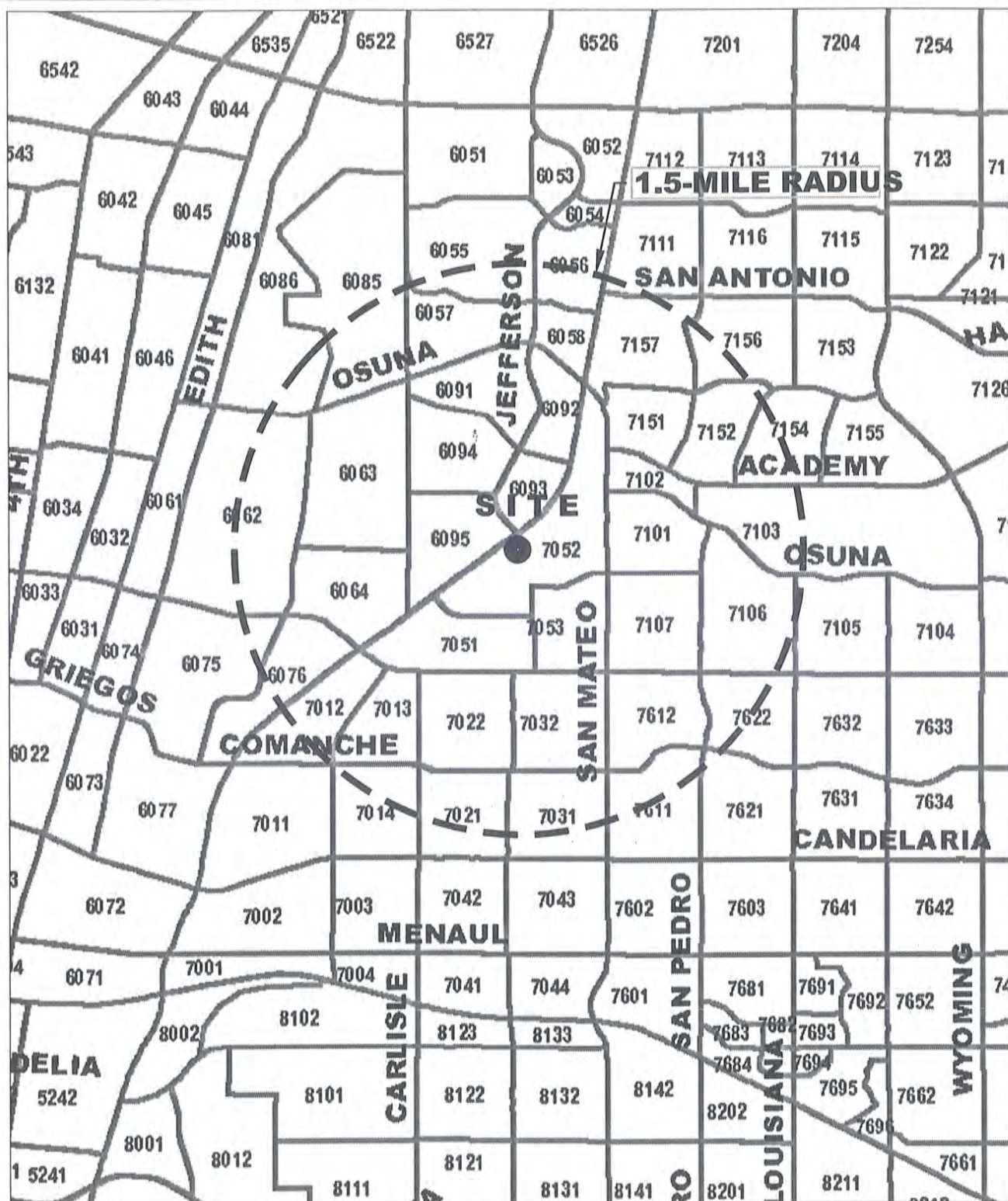
$$T = \frac{0.73 (X) + 0}{50\% \text{ Enter, } 50\% \text{ Exit}}$$

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR)

$$T = \frac{7.8 (X) + 0}{67\% \text{ Enter, } 33\% \text{ Exit}}$$

Comments:
Existing

Based on ITE Trip Generation Manual - 10th Edition



DATA ANALYSIS SUBZONE (DASZ) MAP
Maverik Convenience Store (I-25 / Jefferson St.)

Trip Distribution Table Maverik Convenience Store (Interstate 25 / Jefferson St.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed Retail Commercial Trips

2012 and 2040 Data Taken from Mid-Region Council of Governments
2040 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area in Study	2012 Population		2040 Population	Interpolated Population for the Year 2019	Population in Study	Percent Population	Jefferson St. North			Singer Blvd. East			(2E)			
		2012	2012 Population on DASZ Map					% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing		
Boundary Specified on DASZ Map																	
6055	30%	0	362	0	91	27	0.09%	100%	0.09%	27	0%	0.00%	0	0%	0.00%	0	
6056	45%	0	0	0	0	0	0.00%	50%	0.00%	0	0%	0.00%	0	50%	0.00%	0	
6057	100%	0	0	0	0	0	0.00%	100%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
6058	100%	50	50	50	50	50	0.17%	50%	0.08%	25	0%	0.00%	0	50%	0.08%	25	
6062	45%	1323	1733	1426	642	642	2.18%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
6063	100%	0	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
6064	100%	0	1967	492	492	492	1.67%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
6075	10%	82	101	87	87	9	0.03%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
6076	55%	0	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
6085	30%	3984	4428	4095	1,229	1,229	4.17%	100%	4.17%	1,229	0%	0.00%	0	0%	0.00%	0	
6086	10%	1024	1262	1,084	108	108	0.37%	100%	0.37%	108	0%	0.00%	0	0%	0.00%	0	
6091	100%	0	0	0	0	0	0.00%	100%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
6092	100%	0	0	0	0	0	0.00%	100%	0.00%	0	25%	0.00%	0	50%	0.00%	0	
6093	100%	0	0	0	0	0	0.00%	25%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
6094	100%	0	0	0	0	0	0.00%	75%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
6095	100%	0	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7012	70%	582	799	636	445	445	1.51%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7013	100%	1198	1230	1,206	1,206	1,206	4.10%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7014	30%	2145	2460	2,224	667	667	2.27%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7021	80%	1285	1217	1,268	1,014	1,014	3.44%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7022	100%	1668	1742	1,687	1,687	1,687	5.73%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7031	80%	1976	2439	2,092	1,674	1,674	5.69%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7032	100%	1649	2056	1,751	1,751	1,751	5.95%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7051	100%	3374	3860	3,456	3,456	3,456	11.87%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7052	100%	0	3	1	1	1	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7053	100%	120	257	154	154	154	0.52%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7101	100%	2375	3067	2,548	2,548	2,548	8.65%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7102	100%	810	1029	865	865	865	2.84%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7103	30%	1044	1083	1,054	316	316	1.07%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7106	95%	2011	2240	2,068	1,965	1,965	6.57%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7107	100%	2629	3860	2,937	2,937	2,937	9.98%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7111	5%	1249	1135	1,121	61	61	0.21%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7151	100%	1081	1233	1,119	1,119	1,119	3.80%	0%	0.00%	0	0%	0.00%	0	50%	1.90%	560	
7152	100%	1422	1450	1,429	1,429	1,429	4.65%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7154	35%	1125	1175	1,138	398	398	1.35%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7156	25%	1511	1503	1,509	377	377	1.26%	0%	0.00%	0	0%	0.00%	0	100%	1.28%	377	
7157	95%	703	819	732	695	695	2.36%	0%	0.00%	0	0%	0.00%	0	100%	2.36%	695	
7611	35%	1797	1772	1,791	827	827	2.13%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7612	100%	936	1054	966	966	966	3.28%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7622	45%	1036	1232	1,065	498	498	1.66%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
TOTAL																	
								100.00%		1,389	0.00%		1,657			5.63%	
								42,302	29,443	4.72%							

Trip Distribution Table Maverik Convenience Store (Interstate 25 / Jefferson St.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed Retail Commercial 7

2012 and 2040 Data Taken from Mid-Region Council of Governments

2040 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area In Study	2012 Population		2040 Population	Interpolated Population for the Year 2019	Population in Study	Percent Population	(ME) McLeod Rd. East		(JS) Jefferson St. South		(MW) McLeod Rd. West		
		2012	2040					% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing
Boundary Specified on DASZ Map														
6055	30%	0	362	91	27	0.09%	0%	0.00%	0	0%	0.00%	0	0%	0.00%
6056	45%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%
6057	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%
6058	100%	50	50	50	50	0.17%	0%	0.00%	0	0%	0.00%	0	0%	0.00%
6062	45%	1323	1733	1,426	642	2.18%	0%	0.00%	0	0%	0.00%	0	0%	0.00%
6063	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%
6064	100%	0	1967	492	492	1.87%	0%	0.00%	0	0%	0.00%	0	0%	0.00%
6075	10%	82	101	87	9	0.03%	0%	0.00%	0	0%	0.00%	0	0%	0.00%
6076	55%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%
6085	30%	3984	4428	4,095	1,229	4.17%	0%	0.00%	0	0%	0.00%	0	0%	0.00%
6086	10%	1024	1262	1,084	108	0.37%	0%	0.00%	0	0%	0.00%	0	0%	0.00%
6091	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%
6092	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%
6093	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%
6094	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%
6095	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%
7012	70%	582	799	636	445	1.51%	0%	0.00%	0	0%	0.00%	0	0%	0.00%
7013	100%	1199	1230	1,206	1,206	4.10%	0%	0.00%	0	0%	0.00%	0	0%	0.00%
7014	30%	2145	2460	2,224	667	2.27%	0%	0.00%	0	0%	0.00%	0	0%	0.00%
7021	80%	1285	1217	1,268	1,014	3.44%	0%	0.00%	0	100%	3.44%	1,014	0%	0.00%
7022	100%	1668	1742	1,687	1,687	5.73%	0%	0.00%	0	100%	5.73%	1,687	0%	0.00%
7031	80%	1976	2439	2,092	1,674	5.69%	50%	2.84%	837	50%	2.84%	837	0%	0.00%
7032	100%	1649	2056	1,751	1,751	5.95%	50%	2.97%	876	50%	2.97%	876	0%	0.00%
7051	100%	3374	3660	3,496	3,496	11.87%	0	0.00%	0	50%	5.94%	1,748	0%	0.00%
7052	100%	0	3	1	1	0.00%	100%	0.00%	1	0	0.00%	0	0%	0.00%
7053	100%	120	257	154	154	0.52%	50%	0.26%	77	50%	0.26%	77	0%	0.00%
7101	100%	2375	3067	2,548	2,548	8.65%	100%	8.65%	2,548	0	0.00%	0	0%	0.00%
7102	100%	810	1029	865	865	2.94%	100%	2.94%	865	0	0.00%	0	0%	0.00%
7103	30%	1044	1083	1,054	316	1.07%	100%	1.07%	316	0	0.00%	0	0%	0.00%
7106	95%	2011	2240	2,068	1,965	6.67%	50%	3.34%	983	50%	3.34%	983	0%	0.00%
7107	100%	2629	3860	2,937	2,937	9.98%	50%	4.99%	1,469	50%	4.99%	1,469	0%	0.00%
7111	5%	1249	1135	1,221	61	0.21%	100%	0.21%	61	0	0.00%	0	0%	0.00%
7151	100%	1081	1233	1,119	1,119	3.80%	50%	1.90%	560	0	0.00%	0	0%	0.00%
7152	100%	1422	1450	1,429	1,429	4.85%	50%	2.43%	715	0	0.00%	0	35%	1.70%
7154	35%	1125	1175	1,138	388	1.35%	100%	1.35%	398	0	0.00%	0	0%	0.00%
7156	25%	1511	1503	1,509	377	1.28%	0	0.00%	0	0%	0.00%	0	0%	0.00%
7157	95%	703	819	732	695	2.36%	0	0.00%	0	0%	0.00%	0	0%	0.00%
7611	35%	1797	1772	1,791	827	2.13%	50%	1.06%	314	50%	1.06%	314	0%	0.00%
7612	100%	936	1054	966	966	3.28%	50%	1.64%	483	50%	1.64%	483	0%	0.00%
7622	45%	1036	1232	1,085	488	1.66%	50%	0.83%	244	50%	0.83%	244	0%	0.00%
				42,302	29,443	100.00%			10,744			9,730	500	
						36.48%			33.05%			1.70%		

Trip Distribution Table

Maverik Convenience Store (Interstate 25 / Jefferson St.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed Retail Commercial 1

2012 and 2040 Data Taken from Mid-Region Council of Governments

2040 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

DASZ #	% Sub Area In Study	2012 Population		2040 Population	Interpolated Population for the Year 2019	Population in Study	Percent Population	(2W)			(SW)			(OW)		
		2012	2040					% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	
Boundary Specified on DASZ Map																
6055	30%	0	362	91	27	0.09%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
6056	45%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
6057	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
6058	100%	50	50	50	50	0.17%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
6062	45%	1323	1733	1,426	642	2.18%	100%	2.18%	642	100%	2.18%	642	0%	0.00%	0	
6063	100%	0	0	0	0	0.00%	0%	0.00%	0	100%	0.00%	0	0%	0.00%	0	
6064	100%	0	1967	492	492	1.67%	100%	1.67%	492	0%	0.00%	0	0%	0.00%	0	
6075	10%	82	101	87	9	0.03%	100%	0.03%	9	0%	0.00%	0	0%	0.00%	0	
6076	55%	0	0	0	0	0.00%	100%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
6085	30%	3984	4423	4,095	1,229	4.17%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
6086	10%	1024	1262	1,084	108	0.37%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
6091	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
6092	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
6093	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
6094	100%	0	0	0	0	0.00%	0%	0.00%	0	75%	0.00%	0	0%	0.00%	0	
6095	100%	0	0	0	0	0.00%	25%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7012	70%	582	799	636	445	1.51%	100%	1.51%	445	0%	0.00%	0	0%	0.00%	0	
7013	100%	1198	1230	1,206	1,206	4.10%	100%	4.10%	1,206	0%	0.00%	0	0%	0.00%	0	
7014	30%	2145	2460	2,224	667	2.27%	100%	2.27%	667	0%	0.00%	0	0%	0.00%	0	
7021	80%	1285	1217	1,268	1,014	3.44%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7022	100%	1688	1742	1,687	1,687	5.73%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7031	80%	1976	2439	2,092	1,674	5.69%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7032	100%	1649	2056	1,751	1,751	5.95%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7051	100%	3374	3860	3,496	3,496	11.87%	50%	5.94%	1,748	0%	0.00%	0	0%	0.00%	0	
7052	100%	0	3	1	1	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7053	100%	120	257	154	154	0.52%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7101	100%	2375	3067	2,548	2,548	8.65%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7102	100%	810	1029	865	865	2.94%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7103	30%	1044	1083	1,054	316	1.07%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7106	95%	2011	2240	2,068	1,965	6.87%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7107	100%	2629	3860	2,937	2,937	9.96%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7111	5%	1249	1135	1,221	61	0.21%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7151	100%	1081	1233	1,119	1,119	3.80%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7152	100%	1422	1450	1,429	1,429	4.85%	0%	0.00%	0	0%	0.00%	0	15%	0.73%	214	
7154	35%	1125	1175	1,138	398	1.35%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7156	25%	1511	1503	1,509	377	1.28%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7157	95%	703	819	732	695	2.36%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7611	35%	1797	1772	1,791	627	2.13%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7612	100%	936	1054	966	966	3.26%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
7622	45%	1036	1232	1,085	498	1.66%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0	
														5,209		
														29,443		
														17,69%		
														0.00%		
														0.73%	214	

Maverik Convenience Store

(JN)

(I-25 / Jefferson St.)

Trip Distribution Map (%)

(SW)

4.72

0

SINGER BLVD.

(SE)

0

(2E)

5.63

INTERSTATE 25

(2W)

17.69

(OW) OUTBACK DR.

0.73

(MW)

1.70

McLEOD RD.

JEFFERSON ST.

(ME)

36.49

(JS)

33.05



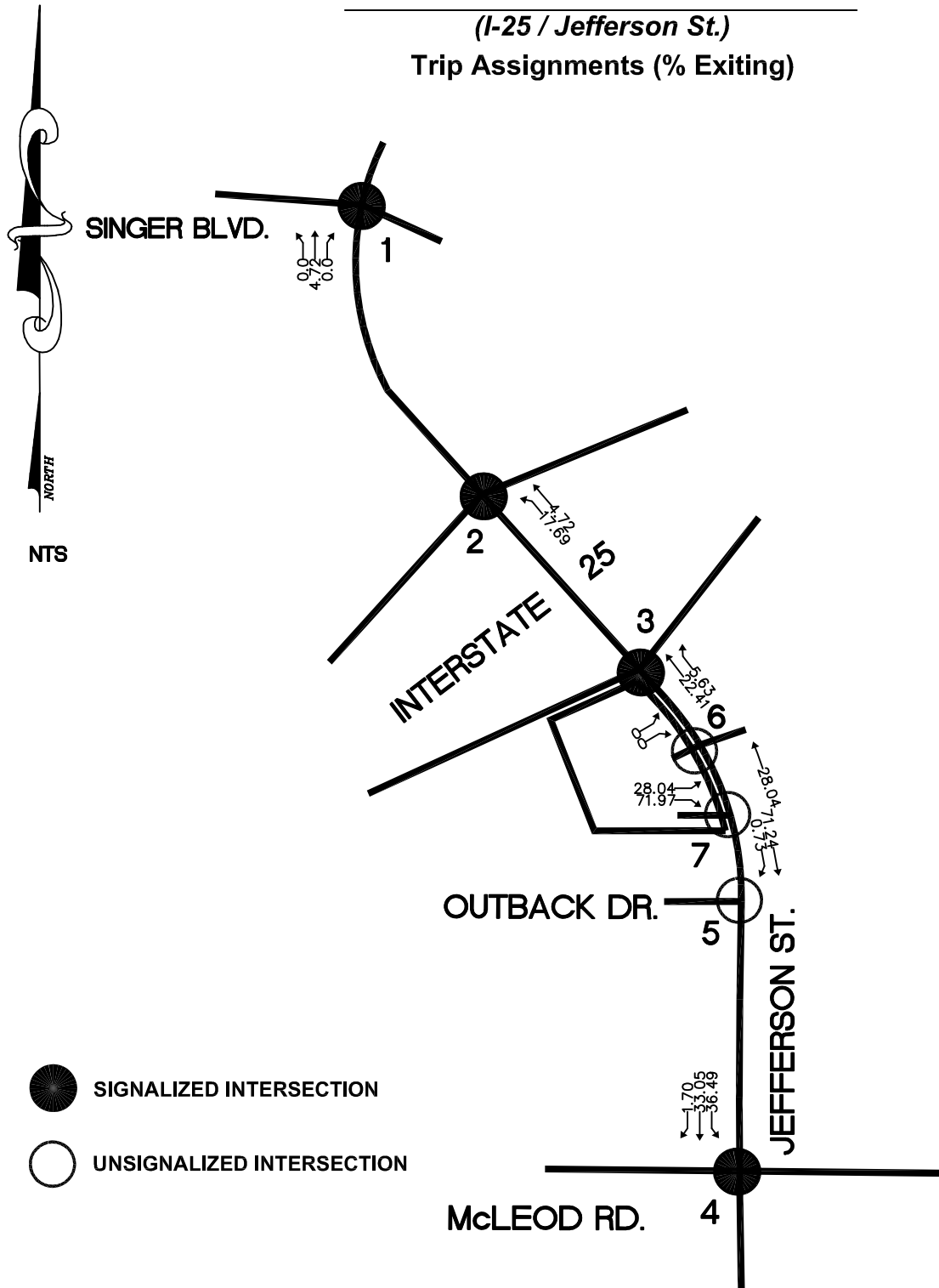
NTS

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(505)212-0267 (Fax)

Maverik Convenience Store

(I-25 / Jefferson St.)

Trip Assignments (% Exiting)

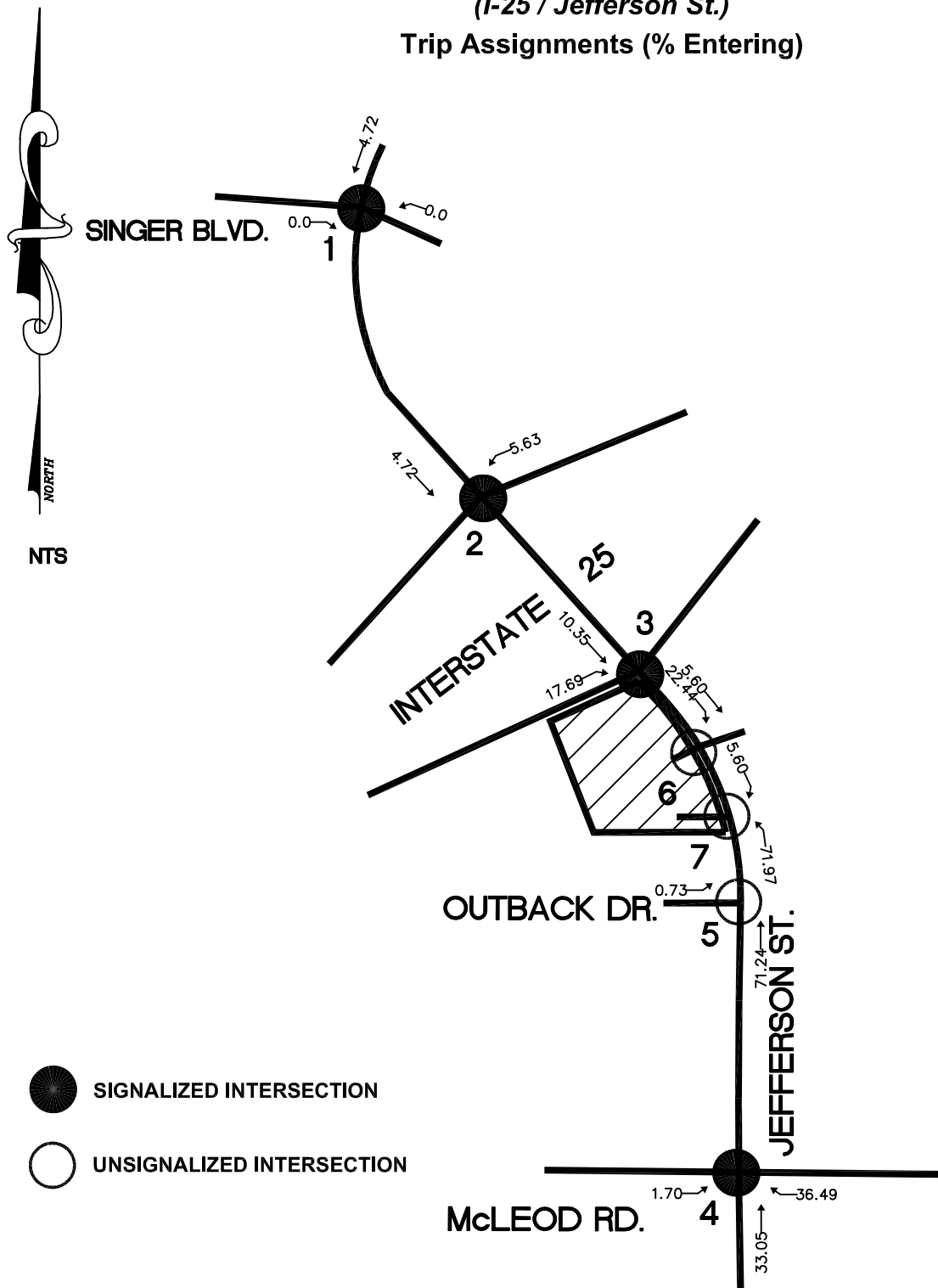


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Maverik Convenience Store

(I-25 / Jefferson St.)

Trip Assignments (% Entering)



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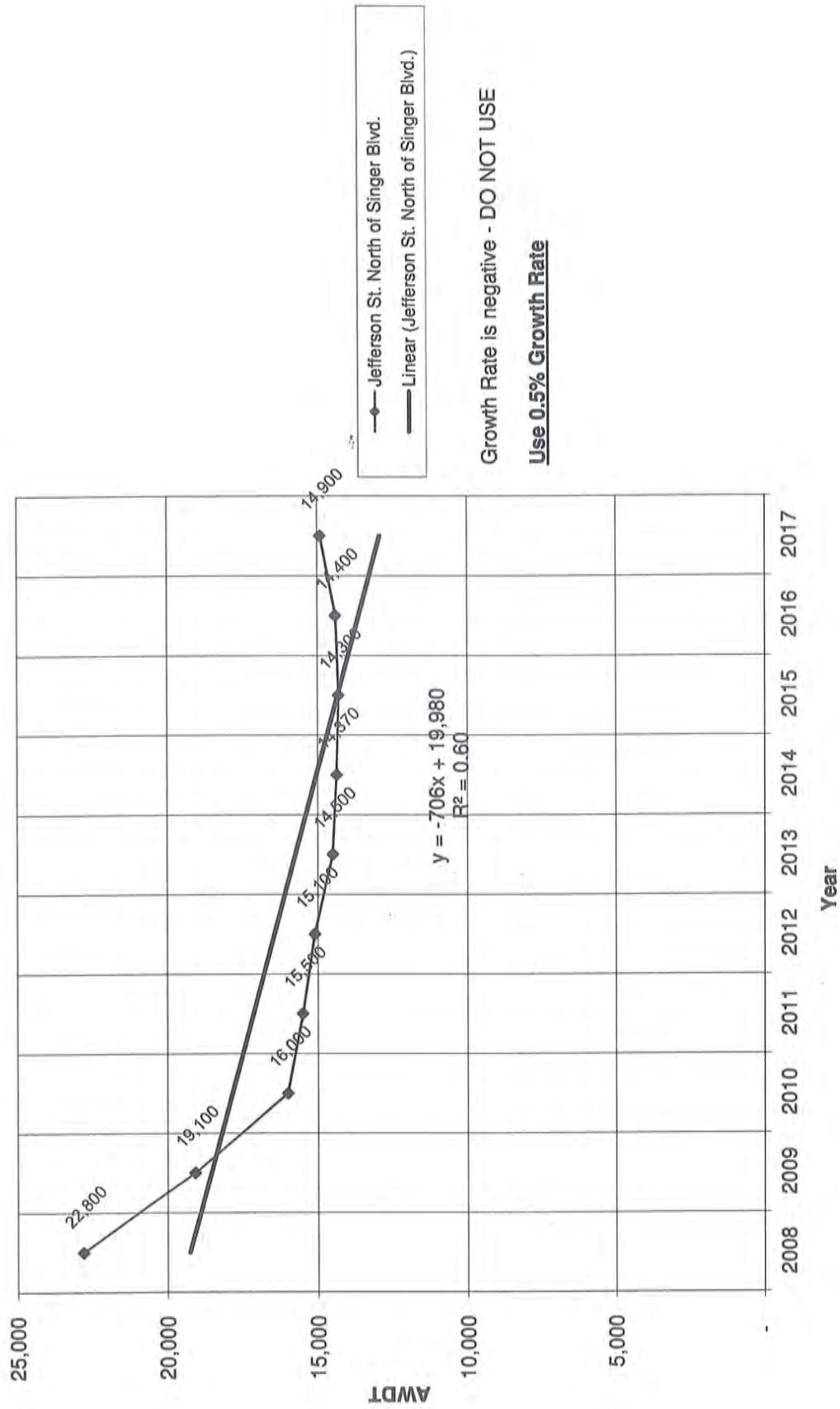
Maverik Convenience Store (I-25 / Jefferson St.)

Historic Growth Rate Table

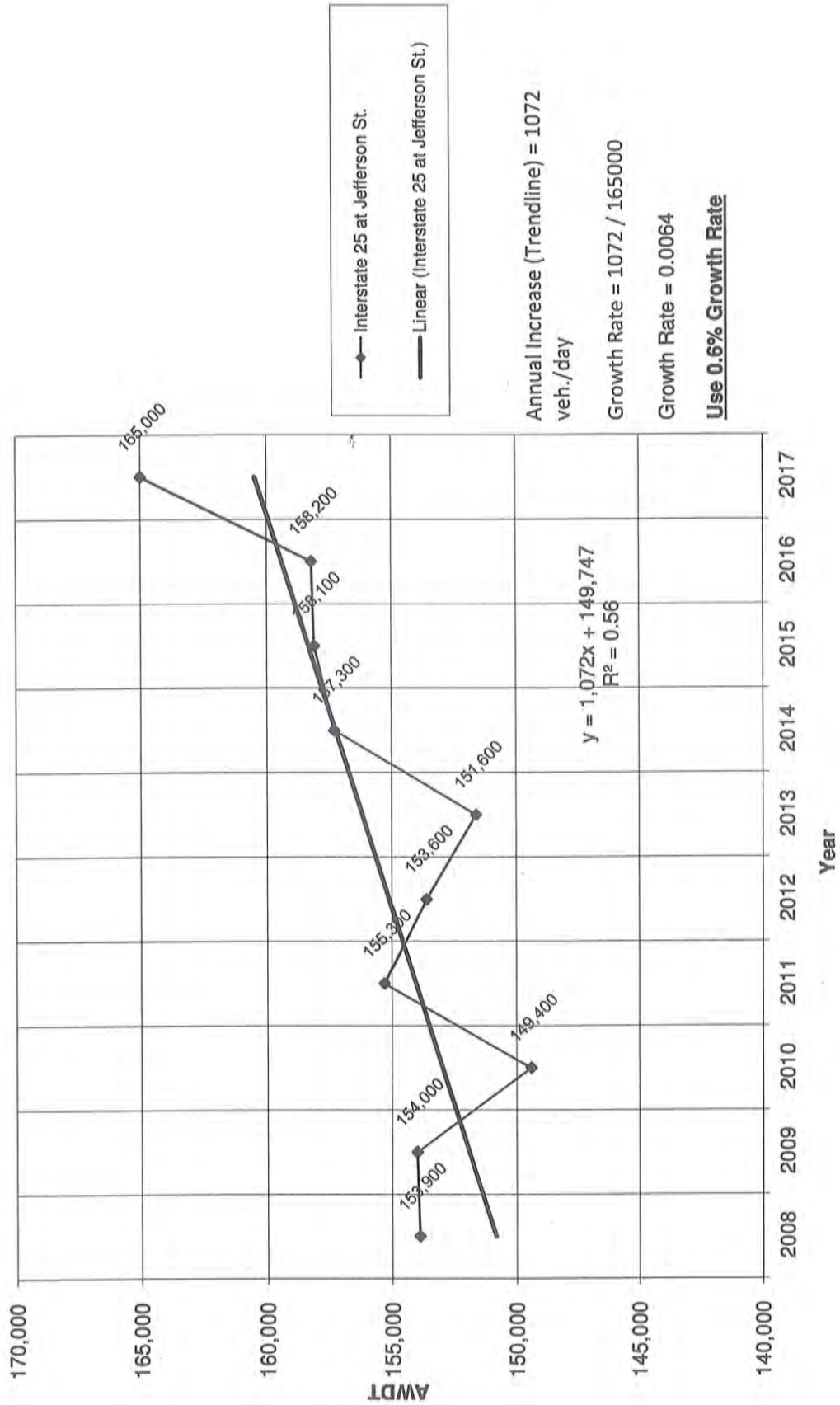
Traffic Flows from MRCOG Map

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Jefferson St. North of Singer Blvd.	22,800	19,100	16,000	15,500	15,100	14,500	14,370	14,300	14,400	14,900
Interstate 25 at Jefferson St.	153,900	154,000	149,400	155,300	153,600	151,600	157,300	158,100	158,200	165,000
McLeod Rd. East of Jefferson St.	11,900	11,800	10,900	10,700	10,700	11,800	11,700	11,600	12,000	12,000
Jefferson St. South of McLeod Rd.	15,500	15,300	15,100	11,500	11,500	11,500	12,750	12,700	12,700	12,900
McLeod Rd. West of Jefferson St.	1,300	1,300	1,200	1,000	1,000	1,000	900	900	910	760
Singer Blvd. West of Jefferson St.	13,000	13,000	11,500	10,100	9,900	10,400	11,240	11,300	11,400	11,200

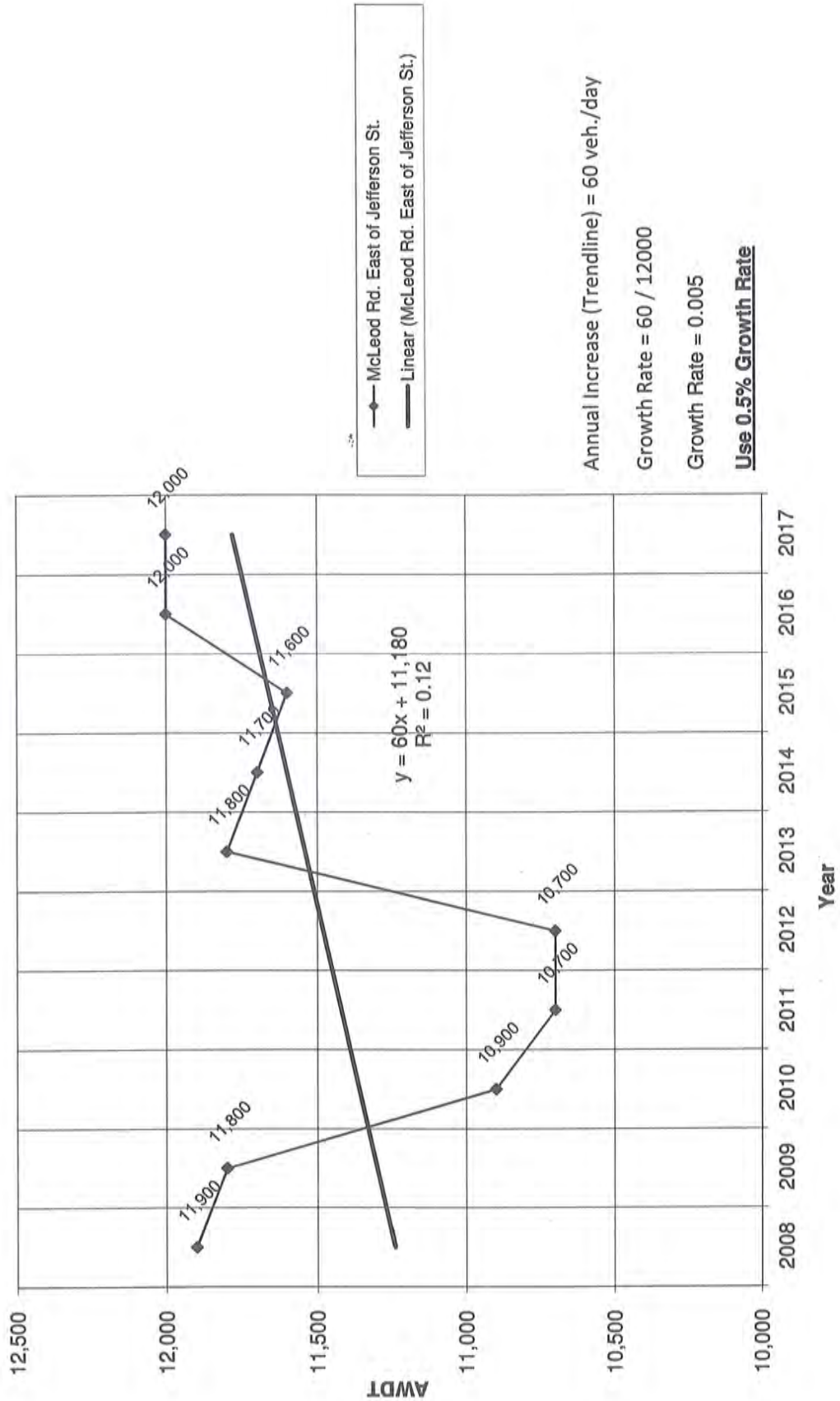
Historic Growth Chart Jefferson St. North of Singer Blvd. (2008-2017)



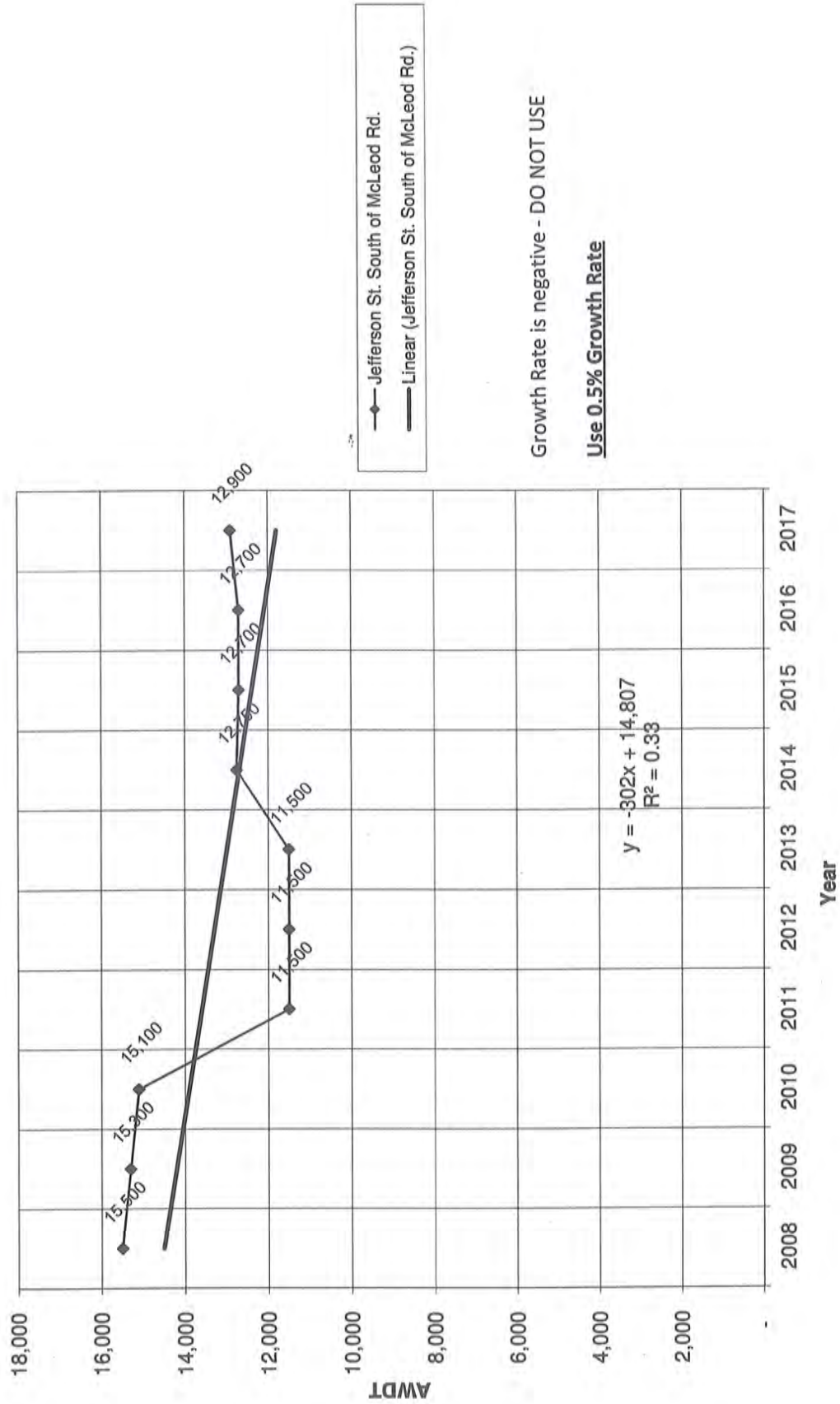
Historic Growth Chart Interstate 25 at Jefferson St. (2008-2017)



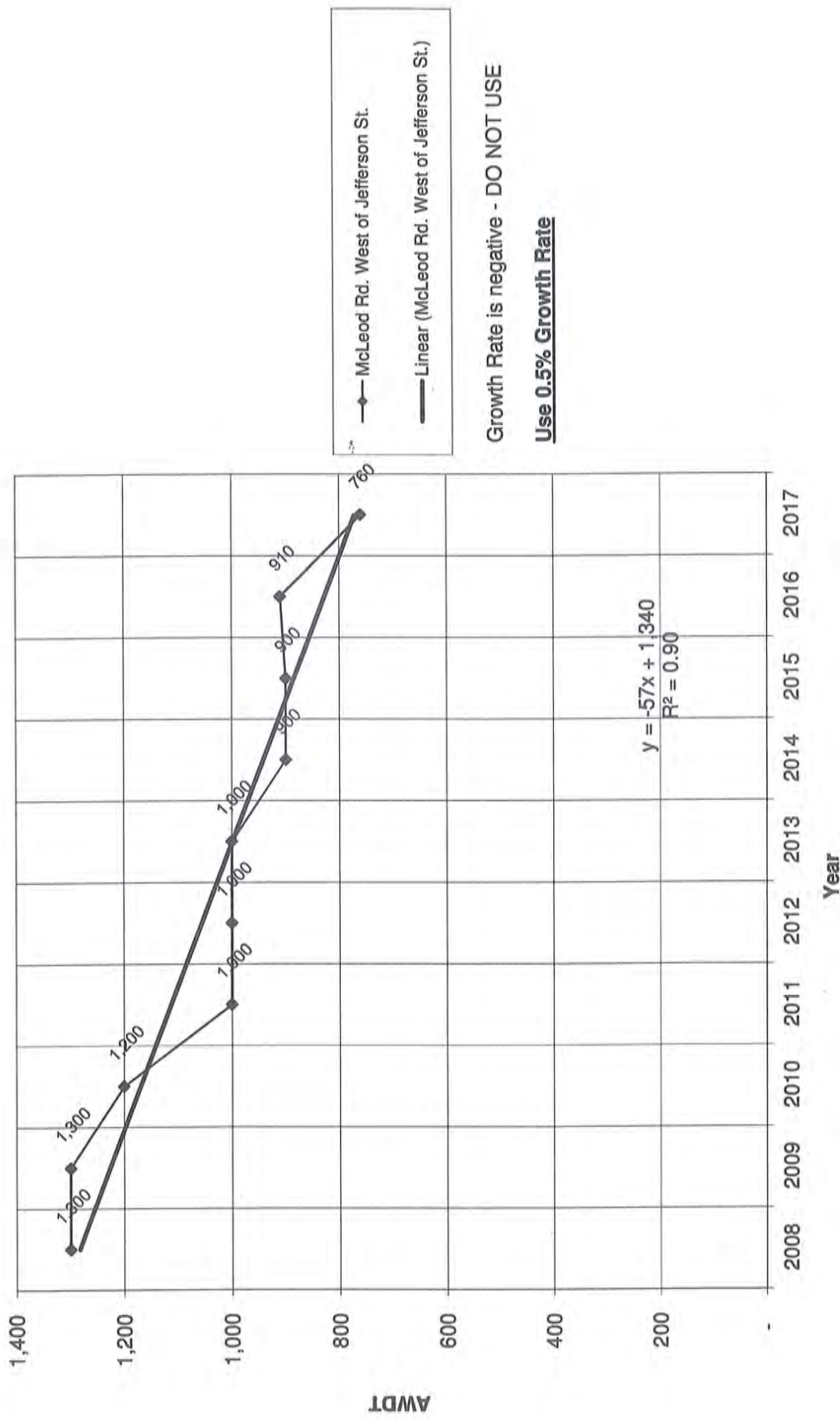
Historic Growth Chart McLeod Rd. East of Jefferson St. (2008-2017)



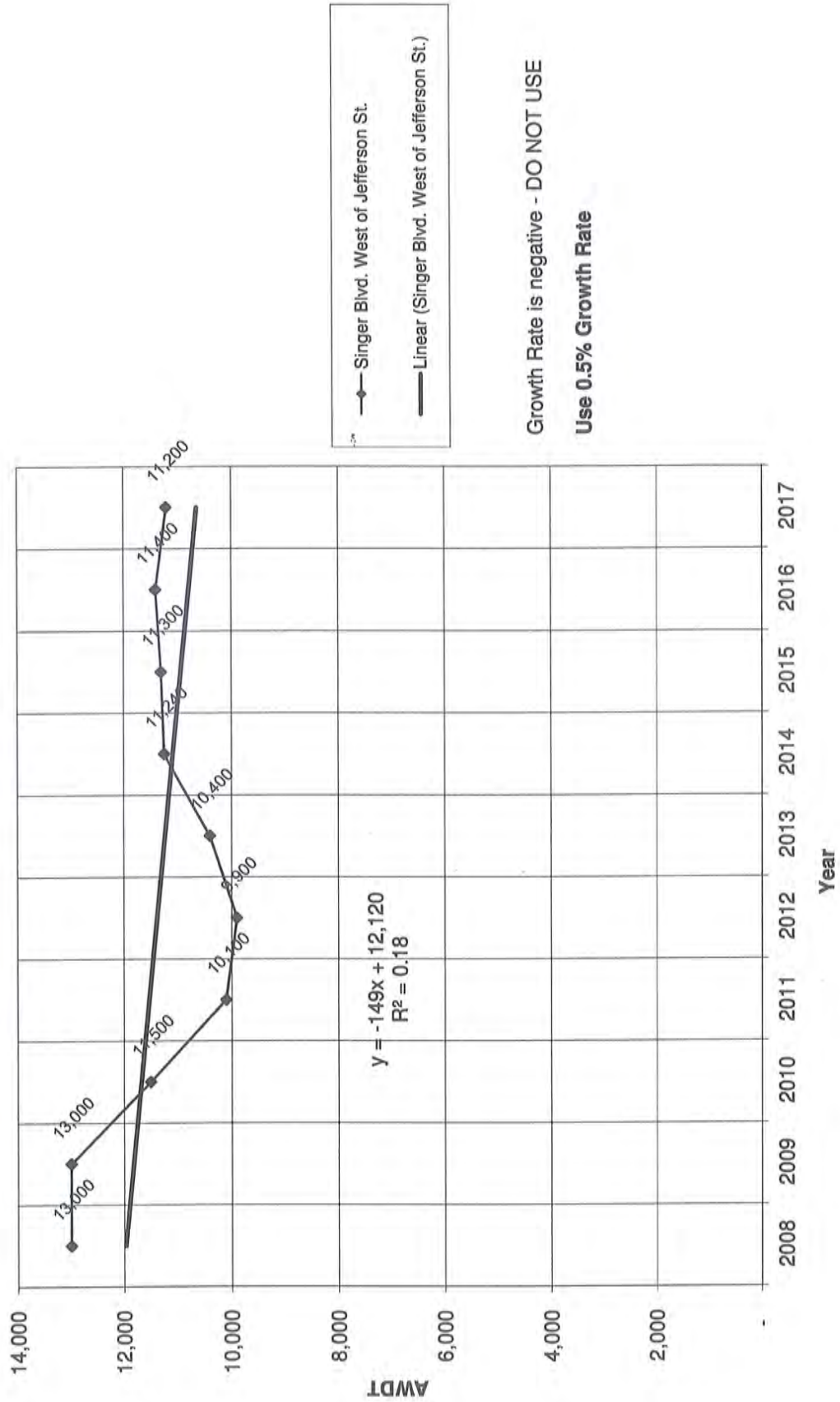
Historic Growth Chart Jefferson St. South of McLeod Rd. (2008-2017)



Historic Growth Chart McLeod Rd. West of Jefferson St. (2008-2017)



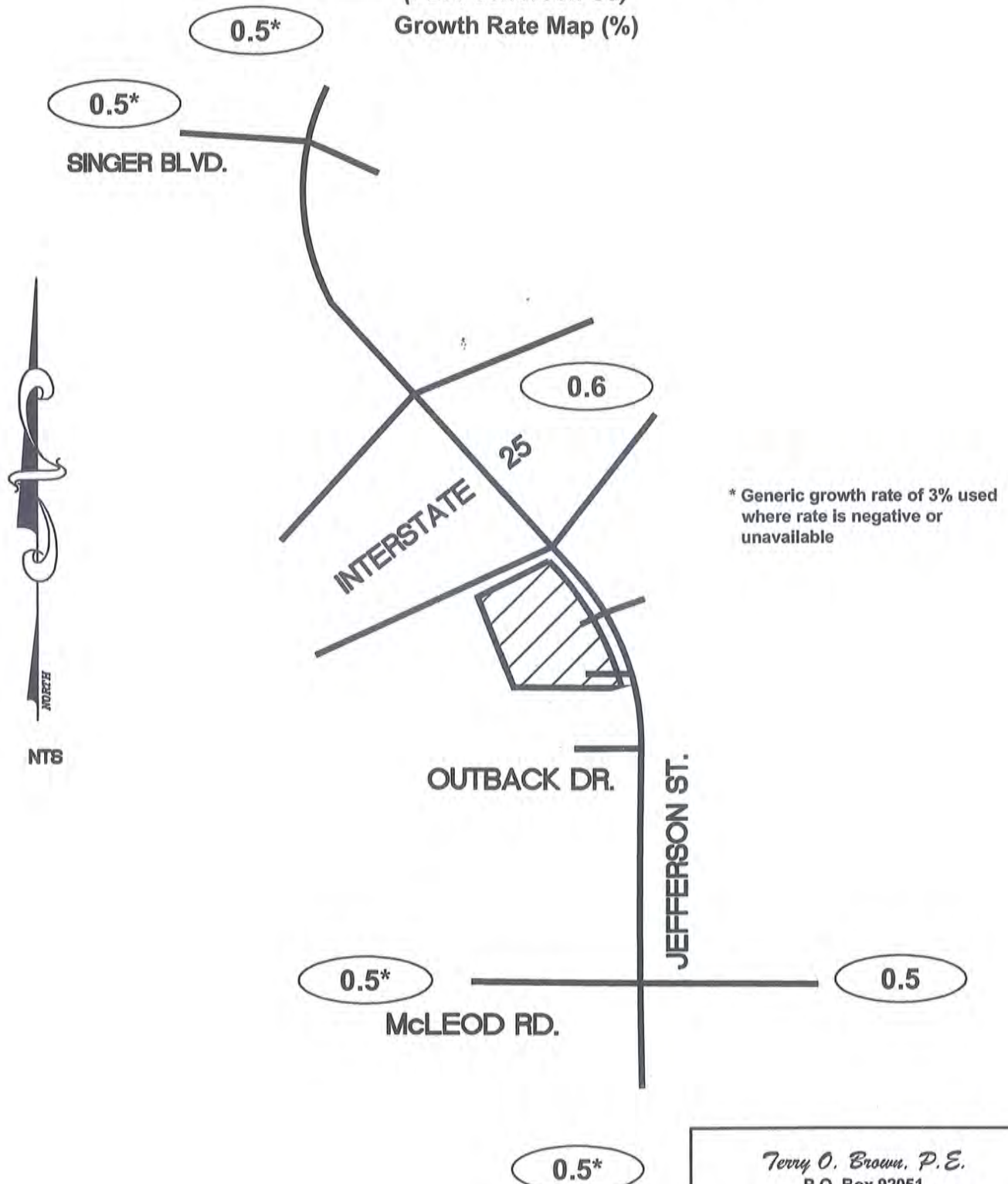
**Historic Growth Chart Singer B
lvd. West of Jefferson St. (2008-2017)**



Maverik Convenience Store

(I-25 / Jefferson St.)

Growth Rate Map (%)



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Maverik Convenience Store (I-25 / Jefferson St.)

Projected Turning Movements SUMMARY
PROPOSED DEVELOPMENT (2019) - 100% Development

INTERSECTION: Summary

Singer Blvd. / Jefferson St.

(1)

3.0% Truck

Existing (2019)

2019 (NO BUILD - A.M.)

2019 (BUILD - A.M.)

0.84			0.84			0.84			0.84			PHF
Eastbound (Singer Blvd.)			Westbound (Singer Blvd.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
125	29	186	75	20	21	391	538	305	20	265	163	
125	29	186	75	20	21	391	538	305	20	265	163	
125	29	186	75	20	21	391	548	305	20	275	163	

Existing (2019)

2019 (NO BUILD - P.M.)

2019 (BUILD - P.M.)

0.93			0.93			0.93			0.93			PHF
Eastbound (Singer Blvd.)			Westbound (Singer Blvd.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
223	37	466	296	45	46	194	274	158	15	632	134	
223	37	466	296	45	46	194	274	158	15	632	134	
223	37	466	296	45	46	194	283	158	15	641	134	

I-25 N. Ramp / Jefferson St.

(2)

3.0% Truck

Existing (2019)

2019 (NO BUILD - A.M.)

2019 (BUILD - A.M.)

0.83			0.83			0.83			0.83			PHF
Eastbound (I-25 N. Ramp)			Westbound (I-25 N. Ramp)			Northbound (Jefferson St.)			Southbound (Jefferson St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	259	325	141	279	0	0	0	0	236	
0	0	0	259	325	141	279	1,170	0	0	569	236	
0	0	0	271	325	141	317	1,180	0	0	579	236	

Existing (2019)

2019 (NO BUILD - P.M.)

2019 (BUILD - P.M.)

0.95			0.95			0.95			0.95			PHF
Eastbound (I-25 N. Ramp)			Westbound (I-25 N. Ramp)			Northbound (Jefferson St.)			Southbound (Jefferson St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	364	493	47	385	0	0	0	0	618	
0	0	0	364	493	47	385	581	0	0	1,244	618	
0	0	0	375	493	47	419	590	0	0	1,253	618	

I-25 S. Ramp / Jefferson St.

(3)

3.0% Truck

Existing (2019)

2019 (NO BUILD - A.M.)

2019 (BUILD - A.M.)

0.83			0.83			0.83			0.83			PHF
Eastbound (I-25 S. Ramp)			Westbound (I-25 S. Ramp)			Northbound (Jefferson St.)			Southbound (Jefferson St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
764	306	178	0	0	0	0	685	204	102	467	0	
764	306	178	0	0	0	0	685	204	102	467	0	
764	306	217	0	0	0	0	733	216	102	490	0	

Existing (2019)

2019 (NO BUILD - P.M.)

2019 (BUILD - P.M.)

0.94			0.94			0.94			0.94			PHF
Eastbound (I-25 S. Ramp)			Westbound (I-25 S. Ramp)			Northbound (Jefferson St.)			Southbound (Jefferson St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
482	657	209	0	0	0	0	484	358	303	941	0	
482	657	209	0	0	0	0	484	358	303	941	0	
482	657	244	0	0	0	0	527	369	303	962	0	

McLeod Rd. / Jefferson St.

(4)

3.0% Truck

Existing (2019)

2019 (NO BUILD - A.M.)

2019 (BUILD - A.M.)

0.80			0.80			0.80			0.80			PHF
Eastbound (McLeod Rd.)			Westbound (McLeod Rd.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
10	46	17	88	29	369	17	444	25	206	374	25	
10	46	17	88	29	369	17	444	25	206	374	25	
14	46	17	88	29	450	17	517	25	284	444	29	

Existing (2019)

2019 (NO BUILD - P.M.)

2019 (BUILD - P.M.)

0.93			0.93			0.93			0.93			PHF
Eastbound (McLeod Rd.)			Westbound (McLeod Rd.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
13	66	25	103	12	329	10	470	107	403	629	8	
13	66	25	103	12	329	10	470	107	403	629	8	
16	66	25	103	12	402	10	536	107	473	692	11	

Maverik Convenience Store (I-25 / Jefferson St.)

Projected Turning Movements SUMMARY PROPOSED DEVELOPMENT (2019) - 100% Development

INTERSECTION:

Summary

Outback Dr. / Jefferson St.
(5)

3.0% Truck

Existing (2019)
2019 (NO BUILD - A.M.)
2019 (BUILD - A.M.)

0.83			0.83			0.83			0.83			PHF
Eastbound (Outback Dr.)			Westbound (Outback Dr.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	0	2	0	0	0	6	877	0	0	619	12	
1	0	2	0	0	0	6	877	0	0	619	12	
3	0	2	0	0	0	6	1,035	0	0	771	14	

Existing (2019)
2019 (NO BUILD - P.M.)
2019 (BUILD - P.M.)

0.97			0.97			0.97			0.97			PHF
Eastbound (Outback Dr.)			Westbound (Outback Dr.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	0	13	0	0	0	10	824	0	0	1,032	28	
4	0	13	0	0	0	10	824	0	0	1,032	28	
5	0	13	0	0	0	10	966	0	0	1,169	29	

Driveway "A" / Jefferson St.
(6)

3.0% Truck

Existing (2019)
2019 (NO BUILD - A.M.)
2019 (BUILD - A.M.)

0.83			0.83			0.83			0.83			PHF
Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (Jefferson St.)			Southbound (Jefferson St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	17	0	40	0	0	15	35	0	0	
0	0	0	17	0	40	0	889	15	35	610	0	
0	0	0	17	0	40	0	949	15	35	622	50	

Existing (2019)
2019 (NO BUILD - P.M.)
2019 (BUILD - P.M.)

0.94			0.94			0.94			0.94			PHF
Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (Jefferson St.)			Southbound (Jefferson St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	15	0	37	0	0	14	34	0	0	
0	0	0	15	0	37	0	842	14	34	1,116	0	
0	0	0	15	0	37	0	896	14	34	1,127	45	

Driveway "B" / Jefferson St.
(7)

3.0% Truck

Existing (2019)
2019 (NO BUILD - A.M.)
2019 (BUILD - A.M.)

0.83			0.83			0.83			0.83			PHF
Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (Jefferson St.)			Southbound (Jefferson St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	878	0	0	631	0	
60	0	153	0	0	0	160	878	0	0	631	12	

Existing (2019)
2019 (NO BUILD - P.M.)
2019 (BUILD - P.M.)

0.94			0.94			0.94			0.94			PHF
Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (Jefferson St.)			Southbound (Jefferson St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	828	0	0	1,060	0	
54	0	138	0	0	0	144	828	0	0	1,060	11	

Maverik Convenience Store (I-25 / Jefferson St.)

Projected Turning Movements Worksheet

Singer Blvd. / Jefferson St.

INTERSECTION :

E-W Street: **Singer Blvd.**

(1)

N-S Street: **Jefferson St.**

Year of Existing Counts

2018

Implementation Year

2019

Growth Rates

0.50%

0.50%

0.50%

0.50%

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total AM Peak Hour BUILD Volumes

Eastbound (Singer Blvd.)			Westbound (Singer Blvd.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
124	29	185	75	20	21	389	535	303	20	264	162
1	0	1	0	0	0	2	3	2	0	1	1
125	29	186	75	20	21	391	538	305	20	265	163
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.72%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.72%	0.00%	0.00%	0.00%	0.00%
0	0	0	0	0	0	0	10	0	0	10	0
125	29	186	75	20	21	391	548	305	20	275	163

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

Eastbound (Singer Blvd.)			Westbound (Singer Blvd.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
222	37	464	295	45	46	193	273	157	15	629	133
1	0	2	1	0	0	1	1	1	0	3	1
223	37	466	296	45	46	194	274	158	15	632	134
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.72%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.72%	0.00%	0.00%	0.00%	0.00%
0	0	0	0	0	0	0	9	0	0	9	0
223	37	466	296	45	46	194	283	158	15	641	134

Number of Commercial Trips Generated

Entering Exiting

222 213 A.M.

100% Commercial Development

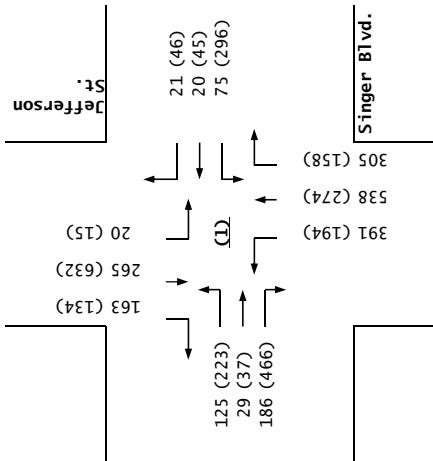
200 192 P.M.

2019 AM Peak Hr. Volumes

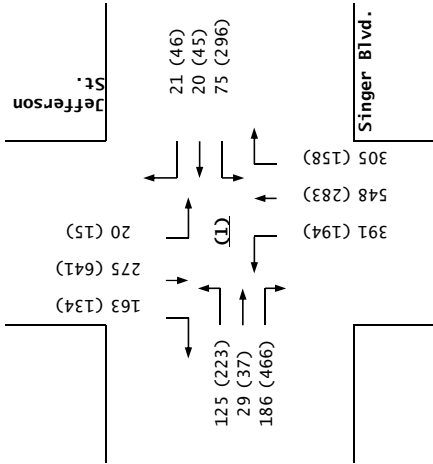
2019 PM Peak Hr. Volumes

Eastbound (Singer Blvd.)			Westbound (Singer Blvd.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
125	29	186	75	20	21	391	538	305	20	265	163
223	37	466	296	45	46	194	274	158	15	632	134

2019
NO BUILD



2019
BUILD



Singer Blvd. / Jefferson St.

Maverik Convenience Store (I-25 / Jefferson St.)

Projected Turning Movements Worksheet

I-25 N. Ramp / Jefferson St.

INTERSECTION :

 E-W Street: **I-25 N. Ramp**

(2)

Due to the close proximity of the ramps & Drive "A", the volumes were balanced & may not match the existing volumes.

 N-S Street: **Jefferson St.**

Year of Existing Counts

2018

Implementation Year

2019

Growth Rates

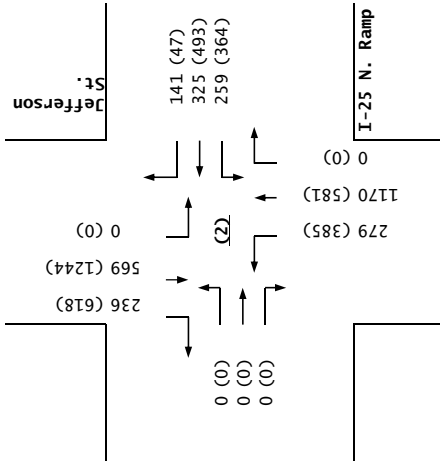
	0.50%			0.50%			0.60%			0.50%		
	Eastbound (I-25 N. Ramp)			Westbound (I-25 N. Ramp)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	258	323	140	277	0	0	0	0	235
Background Traffic Growth	0	0	0	1	2	1	2	0	0	0	0	1
Subtotal (NO BUILD - A.M.)	0	0	0	259	325	141	279	1,170	0	0	569	236
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	5.63%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.72%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	17.69%	4.72%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	12	0	0	38	10	0	0	10	0
Total AM Peak Hour BUILD Volumes	0	0	0	271	325	141	317	1,180	0	0	579	236

	0.50%			0.50%			0.60%			0.50%		
	Eastbound (I-25 N. Ramp)			Westbound (I-25 N. Ramp)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	362	491	47	383	0	0	0	0	615
Background Traffic Growth	0	0	0	2	2	0	2	0	0	0	0	3
Subtotal (NO BUILD - P.M.)	0	0	0	364	493	47	385	581	0	0	1,244	618
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	5.63%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.72%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	17.69%	4.72%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	11	0	0	34	9	0	0	9	0
Total PM Peak Hour BUILD Volumes	0	0	0	375	493	47	419	590	0	0	1,253	618

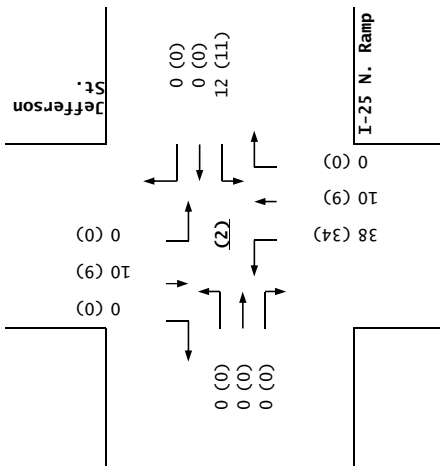
Number of Commercial Trips Generated	Entering	Exiting	A.M.	100% Commercial Development
	222	213		
	200	192		

	Eastbound (I-25 N. Ramp)			Westbound (I-25 N. Ramp)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
2019 AM Peak Hr. Volumes	0	0	0	259	325	141	279	0	0	0	0	236
2019 PM Peak Hr. Volumes	0	0	0	364	493	47	385	0	0	0	0	618

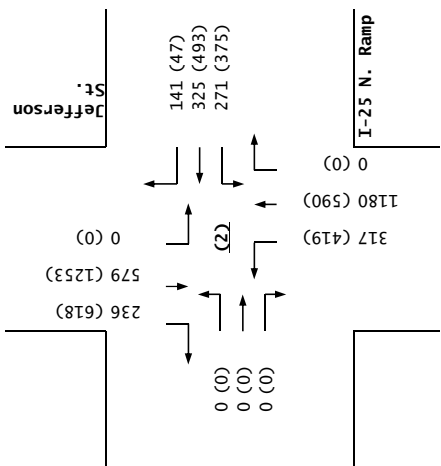
2019
NO BUILD



Trips



2019
BUILD



I-25 N. Ramp / Jefferson St.

Maverik Convenience Store (I-25 / Jefferson St.)

Projected Turning Movements Worksheet

I-25 S. Ramp / Jefferson St.

INTERSECTION :

 E-W Street: **I-25 S. Ramp**

(3) Due to the close proximity of the ramps & Drive "A", the volumes were balanced & may not match the existing volumes.

 N-S Street: **Jefferson St.**

Year of Existing Counts

2018

Implementation Year

2019

Growth Rates

0.50%

0.50%

0.50%

0.60%

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total AM Peak Hour BUILD Volumes

Eastbound (I-25 S. Ramp)			Westbound (I-25 S. Ramp)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
760	304	177	0	0	0	0	682	203	101	464	0
4	2	1	0	0	0	0	3	1	1	3	0
764	306	178	0	0	0	0	685	204	102	467	0
0.00%	0.00%	17.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.35%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	22.41%	5.63%	0.00%	0.00%	0.00%
0	0	39	0	0	0	0	48	12	0	23	0
764	306	217	0	0	0	0	733	216	102	490	0

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

Eastbound (I-25 S. Ramp)			Westbound (I-25 S. Ramp)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
480	654	208	0	0	0	0	482	356	301	935	0
2	3	1	0	0	0	0	2	2	2	6	0
482	657	209	0	0	0	0	484	358	303	941	0
0.00%	0.00%	17.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.35%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	22.41%	5.63%	0.00%	0.00%	0.00%
0	0	35	0	0	0	0	43	11	0	21	0
482	657	244	0	0	0	0	527	369	303	962	0

Number of Commercial Trips Generated

Entering Existing

222

213

A.M.

100% Commercial Development

200

192

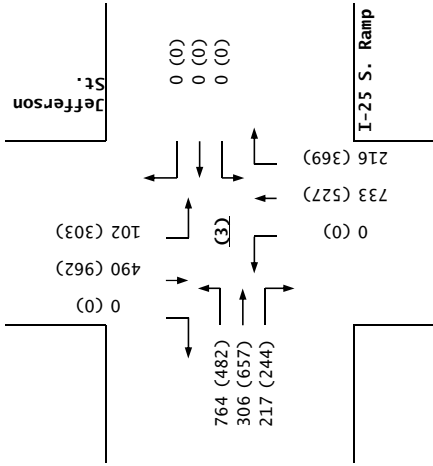
P.M.

2019 AM Peak Hr. Volumes

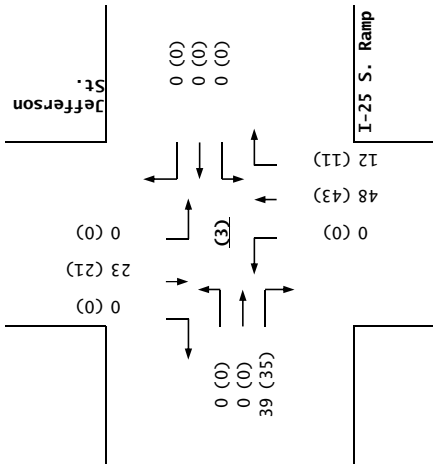
2019 PM Peak Hr. Volumes

Eastbound (I-25 S. Ramp)			Westbound (I-25 S. Ramp)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
764	306	178	0	0	0	0	685	204	102	467	0
482	657	209	0	0	0	0	484	358	303	941	0

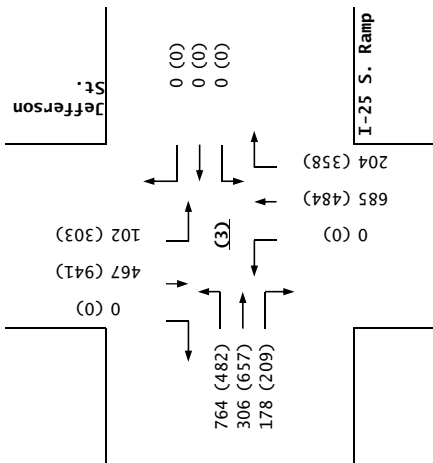
2019
BUILD



Trips



2019
NO BUILD



I-25 S. Ramp / Jefferson St.

Maverik Convenience Store (I-25 / Jefferson St.)

Projected Turning Movements Worksheet

McLeod Rd. / Jefferson St.

INTERSECTION :

E-W Street: **McLeod Rd.**

N-S Street: **Jefferson St.**

(4) Due to the close proximity of the ramps & Drive "A", the volumes were balanced & may not match the existing volumes.

Year of Existing Counts

2018

Implementation Year

2019

Growth Rates

0.50%

0.50%

0.50%

0.50%

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total AM Peak Hour BUILD Volumes

Eastbound (McLeod Rd.)			Westbound (McLeod Rd.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
10	46	17	88	29	367	17	442	25	205	372	25
0	0	0	0	0	2	0	2	0	1	2	0
10	46	17	88	29	369	17	444	25	206	374	25
1.70%	0.00%	0.00%	0.00%	0.00%	36.49%	0.00%	33.05%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	36.49%	33.05%	1.70%
4	0	0	0	0	81	0	73	0	78	70	4
14	46	17	88	29	450	17	517	25	284	444	29

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

Eastbound (McLeod Rd.)			Westbound (McLeod Rd.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
13	66	25	102	12	327	10	468	106	401	626	8
0	0	0	1	0	2	0	2	1	2	3	0
13	66	25	103	12	329	10	470	107	403	629	8
1.70%	0.00%	0.00%	0.00%	0.00%	36.49%	0.00%	33.05%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	36.49%	33.05%	1.70%
3	0	0	0	0	73	0	66	0	70	63	3
16	66	25	103	12	402	10	536	107	473	692	11

Number of Commercial Trips Generated

Entering Exiting

222 213 A.M.

200 192 P.M.

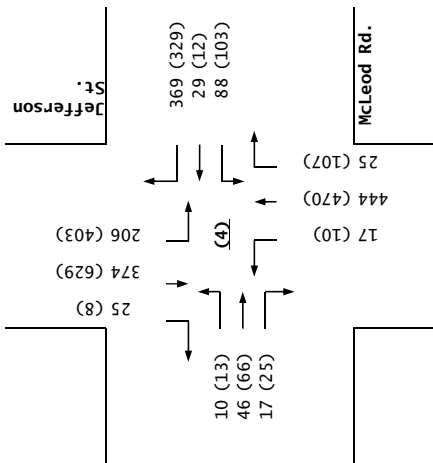
100% Commercial Development

2019 AM Peak Hr. Volumes

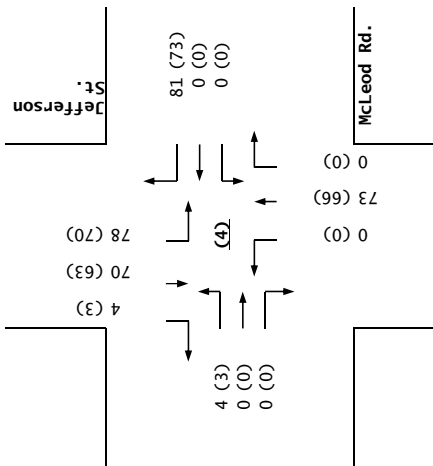
2019 PM Peak Hr. Volumes

Eastbound (McLeod Rd.)			Westbound (McLeod Rd.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
10	46	17	88	29	369	17	444	25	206	374	25
13	66	25	103	12	329	10	470	107	403	629	8

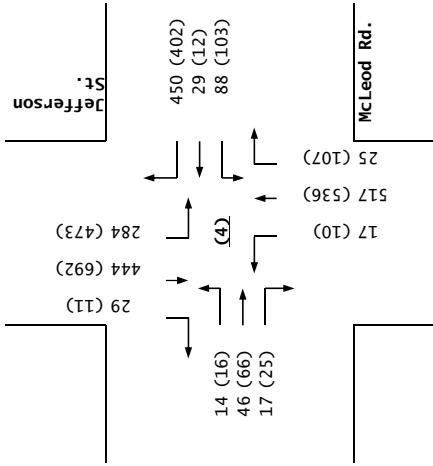
2019
NO BUILD



Trips



2019
BUILD



McLeod Rd. / Jefferson St.

Maverik Convenience Store (I-25 / Jefferson St.)

Projected Turning Movements Worksheet

Outback Dr. / Jefferson St.

INTERSECTION :

E-W Street: **Outback Dr.**
N-S Street: **Jefferson St.**

(5)

Year of Existing Counts

2018

Implementation Year

2019

Growth Rates

0.50%

0.50%

0.50%

0.50%

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total AM Peak Hour BUILD Volumes

Eastbound (Outback Dr.)			Westbound (Outback Dr.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
1	0	2	0	0	0	6	873	0	0	616	12
0	0	0	0	0	0	0	4	0	0	3	0
1	0	2	0	0	0	6	877	0	0	619	12
0.73%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	71.24%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	71.24%	0.73%
2	0	0	0	0	0	0	158	0	0	152	2
3	0	2	0	0	0	6	1,035	0	0	771	14

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

Eastbound (Outback Dr.)			Westbound (Outback Dr.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
4	0	13	0	0	0	10	820	0	0	1,027	28
0	0	0	0	0	0	0	4	0	0	5	0
4	0	13	0	0	0	10	824	0	0	1,032	28
0.73%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	71.24%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	71.24%	0.73%
1	0	0	0	0	0	0	142	0	0	137	1
5	0	13	0	0	0	10	966	0	0	1,169	29

Number of Commercial Trips Generated

Entering Exiting

222 213 A.M.

200 192 P.M.

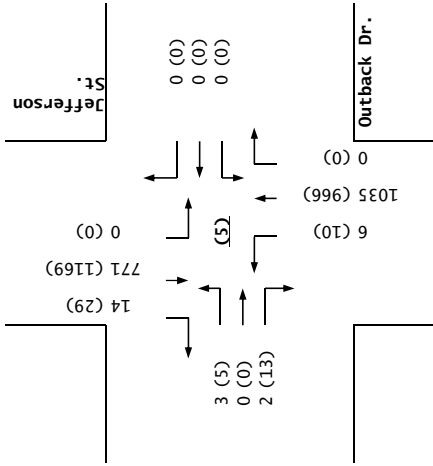
100% Commercial Development

2019 AM Peak Hr. Volumes

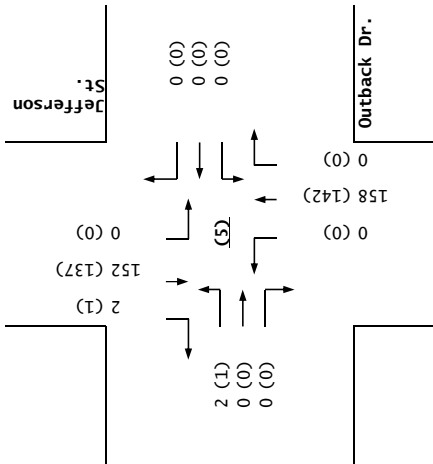
2019 PM Peak Hr. Volumes

Eastbound (Outback Dr.)			Westbound (Outback Dr.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
1	0	2	0	0	0	6	877	0	0	619	12
4	0	13	0	0	0	10	824	0	0	1,032	28

2019
BUILD

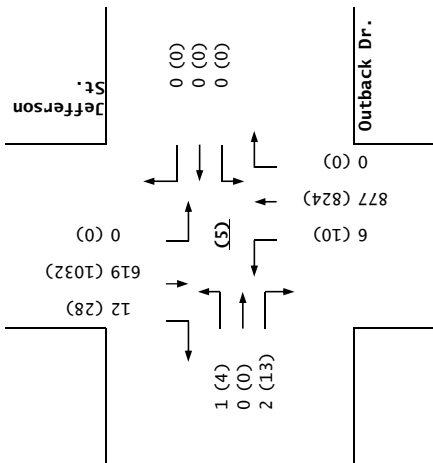


Trips



Outback Dr. / Jefferson St.

2019
NO BUILD



Maverik Convenience Store (I-25 / Jefferson St.)

Projected Turning Movements Worksheet

Driveway "A" / Jefferson St.

INTERSECTION :

E-W Street: **Driveway "A"**

(6)

N-S Street: **Jefferson St.**

Year of Existing Counts

2018

Implementation Year

2019

Growth Rates

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total AM Peak Hour BUILD Volumes

0.50%			0.50%			0.50%			0.50%		
Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	0	0	17	0	40	0	0	15	35	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	17	0	40	0	889	15	35	610	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.60%	22.44%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	28.04%	0.00%	0.00%	0.00%	0.00%
0	0	0	0	0	0	0	60	0	0	12	50
0	0	0	17	0	40	0	949	15	35	622	50

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

0.50%			0.50%			0.50%			0.50%		
Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	0	0	15	0	37	0	0	14	34	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	15	0	37	0	842	14	34	1,116	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.60%	22.44%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	28.04%	0.00%	0.00%	0.00%	0.00%
0	0	0	0	0	0	0	54	0	0	11	45
0	0	0	15	0	37	0	896	14	34	1,127	45

Number of Commercial Trips Generated

Entering Exiting

222 213 A.M.

100% Commercial Development

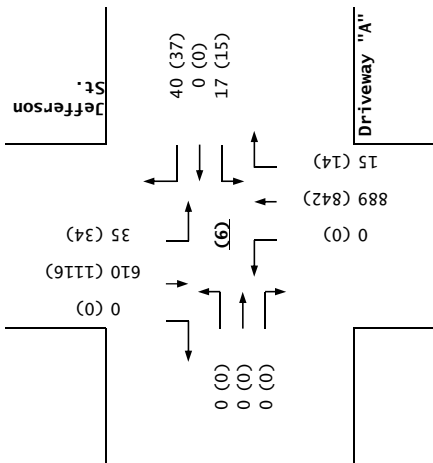
200 192 P.M.

2019 AM Peak Hr. Volumes

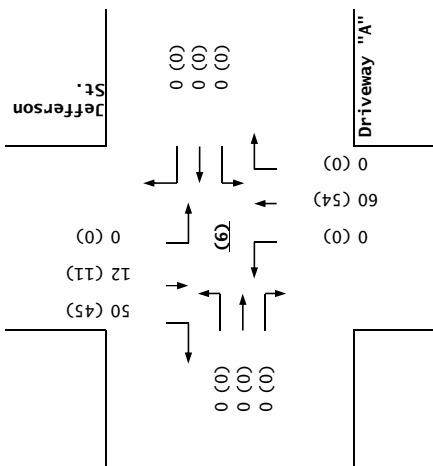
2019 PM Peak Hr. Volumes

Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
0	0	0	17	0	40	0	0	15	35	0	0
0	0	0	15	0	37	0	0	14	34	0	0

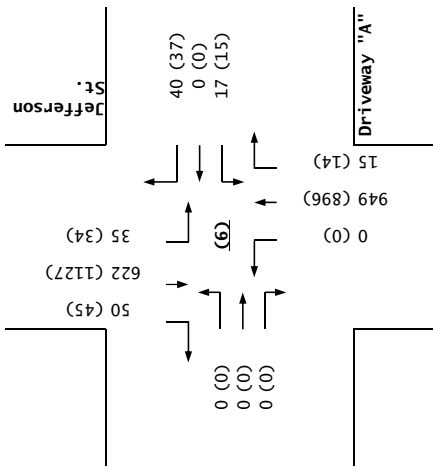
2019
NO BUILD



Trips



2019
BUILD



Driveway "A" / Jefferson St.

Maverik Convenience Store (I-25 / Jefferson St.)

Projected Turning Movements Worksheet

Driveway "B" / Jefferson St.

INTERSECTION :

E-W Street: **Driveway "B"**

(7)

N-S Street: **Jefferson St.**

Year of Existing Counts

2018

Implementation Year

2019

Growth Rates

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total AM Peak Hour BUILD Volumes

0.50%			0.50%			0.50%			0.50%		
Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	878	0	0	631	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	71.97%	0.00%	0.00%	0.00%	0.00%	5.60%
28.04%	0.00%	71.97%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
60	0	153	0	0	0	160	0	0	0	0	12
60	0	153	0	0	0	160	878	0	0	631	12

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

0.50%			0.50%			0.50%			0.50%		
Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	828	0	0	1,060	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	71.97%	0.00%	0.00%	0.00%	0.00%	5.60%
28.04%	0.00%	71.97%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
54	0	138	0	0	0	144	0	0	0	0	11
54	0	138	0	0	0	144	828	0	0	1,060	11

Number of Commercial Trips Generated

Entering Exiting

222 213 A.M.

100% Commercial Development

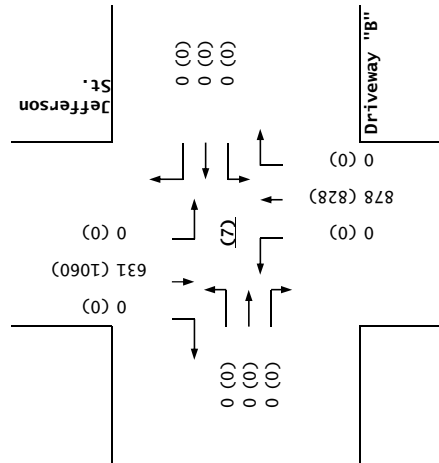
200 192 P.M.

2019 AM Peak Hr. Volumes

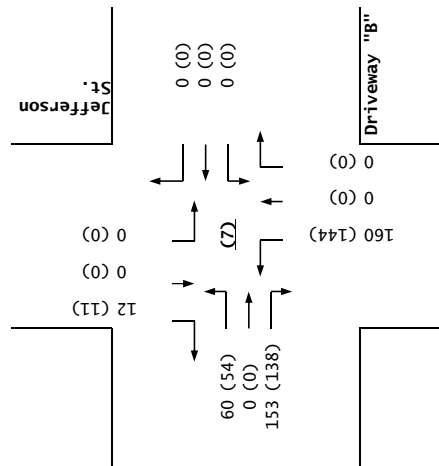
2019 PM Peak Hr. Volumes

Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

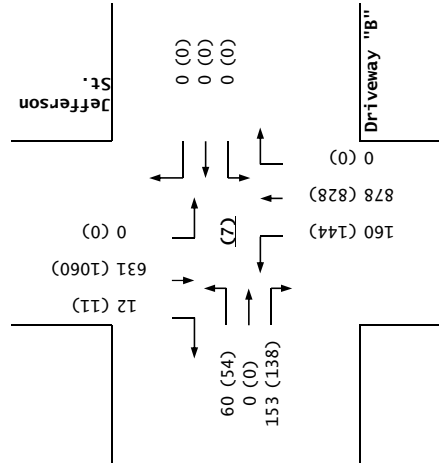
2019
NO BUILD



Trips



2019
BUILD



Driveway "B" / Jefferson St.

Maverik Convenience Store (I-25 / Jefferson St.)

Projected Turning Movements SUMMARY PROPOSED DEVELOPMENT (2029) - 100% Development

INTERSECTION : Summary

Singer Blvd. / Jefferson St.

			0.84				0.84				0.84				0.84	PHF
(1)																
3.0% Truck																
Existing (2019)																
2029 (NO BUILD - A.M.)																
2029 (BUILD - A.M.)																
			0.93				0.93				0.93				0.93	PHF
Existing (2019)																
2029 (NO BUILD - P.M.)																
2029 (BUILD - P.M.)																

I-25 N. Ramp / Jefferson St.

			0.83				0.83				0.83				0.83	PHF
(2)																
3.0% Truck																
Existing (2019)																
2029 (NO BUILD - A.M.)																
2029 (BUILD - A.M.)																
			0.95				0.95				0.95				0.95	PHF
Existing (2019)																
2029 (NO BUILD - P.M.)																
2029 (BUILD - P.M.)																

I-25 S. Ramp / Jefferson St.

			0.83				0.83				0.83				0.83	PHF
(3)																
3.0% Truck																
Existing (2019)																
2029 (NO BUILD - A.M.)																
2029 (BUILD - A.M.)																
			0.94				0.94				0.94				0.94	PHF
Existing (2019)																
2029 (NO BUILD - P.M.)																
2029 (BUILD - P.M.)																

McLeod Rd. / Jefferson St.

			0.80				0.80				0.80				0.80	PHF
(4)																
3.0% Truck																
Existing (2019)																
2029 (NO BUILD - A.M.)																
2029 (BUILD - A.M.)																
			0.93				0.93				0.93				0.93	PHF
Existing (2019)																
2029 (NO BUILD - P.M.)																
2029 (BUILD - P.M.)																

Maverik Convenience Store (I-25 / Jefferson St.)

Projected Turning Movements SUMMARY
PROPOSED DEVELOPMENT (2029) - 100% Development

INTERSECTION : Summary

Outback Dr. / Jefferson St.

(5)

3.0% Truck

Existing (2019)

2029 (NO BUILD - A.M.)

2029 (BUILD - A.M.)

0.83			0.83			0.83			0.83			PHF
Eastbound (Outback Dr.)			Westbound (Outback Dr.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	0	2	0	0	0	6	877	0	0	619	12	
1	0	2	0	0	0	6	921	0	0	650	13	
3	0	2	0	0	0	6	1,079	0	0	802	15	

Existing (2019)

2029 (NO BUILD - P.M.)

2029 (BUILD - P.M.)

0.97			0.97			0.97			0.97			PHF
Eastbound (Outback Dr.)			Westbound (Outback Dr.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
4	0	13	0	0	0	10	824	0	0	1,032	28	
4	0	14	0	0	0	11	865	0	0	1,083	30	
5	0	14	0	0	0	11	1,007	0	0	1,220	31	

Driveway "A" / Jefferson St.

(6)

3.0% Truck

Existing (2019)

2029 (NO BUILD - A.M.)

2029 (BUILD - A.M.)

0.83			0.83			0.83			0.83			PHF
Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (Jefferson St.)			Southbound (Jefferson St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	17	0	40	0	0	15	35	0	0	
0	0	0	18	0	42	0	934	16	37	645	0	
0	0	0	18	0	42	0	994	16	37	657	50	

Existing (2019)

2029 (NO BUILD - P.M.)

2029 (BUILD - P.M.)

0.94			0.94			0.94			0.94			PHF
Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbound (Jefferson St.)			Southbound (Jefferson St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	15	0	37	0	0	14	34	0	0	
0	0	0	16	0	39	0	885	15	36	1,180	0	
0	0	0	16	0	39	0	939	15	36	1,191	45	

Driveway "B" / Jefferson St.

(7)

3.0% Truck

Existing (2019)

2029 (NO BUILD - A.M.)

2029 (BUILD - A.M.)

0.83			0.83			0.83			0.83			PHF
Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (Jefferson St.)			Southbound (Jefferson St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	922	0	0	663	0	
60	0	153	0	0	0	160	922	0	0	663	12	

Existing (2019)

2029 (NO BUILD - P.M.)

2029 (BUILD - P.M.)

0.94			0.94			0.94			0.94			PHF
Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (Jefferson St.)			Southbound (Jefferson St.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	869	0	0	1,113	0	
54	0	138	0	0	0	144	869	0	0	1,113	11	

Maverik Convenience Store (I-25 / Jefferson St.)

Projected Turning Movements Worksheet

Singer Blvd. / Jefferson St.

INTERSECTION :

E-W Street: **Singer Blvd.**

(1)

N-S Street: **Jefferson St.**

Year of Existing Counts

2018

Horizon Year

2029

Growth Rates

0.50%

0.50%

0.50%

0.50%

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total AM Peak Hour BUILD Volumes

Eastbound (Singer Blvd.)			Westbound (Singer Blvd.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
124	29	185	75	20	21	389	535	303	20	264	162
7	2	10	4	1	1	21	29	17	1	15	9
131	31	195	79	21	22	410	564	320	21	279	171
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.72%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.72%	0.00%	0.00%	0.00%	0.00%
0	0	0	0	0	0	0	10	0	0	10	0
131	31	195	79	21	22	410	574	320	21	289	171

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

Eastbound (Singer Blvd.)			Westbound (Singer Blvd.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
222	37	464	295	45	46	193	273	157	15	629	133
12	2	26	16	2	3	11	15	9	1	35	7
234	39	490	311	47	49	204	288	166	16	664	140
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.72%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.72%	0.00%	0.00%	0.00%	0.00%
0	0	0	0	0	0	0	9	0	0	9	0
234	39	490	311	47	49	204	297	166	16	673	140

Number of Commercial Trips Generated

Entering Exiting

222 213 A.M.

100% Commercial Development

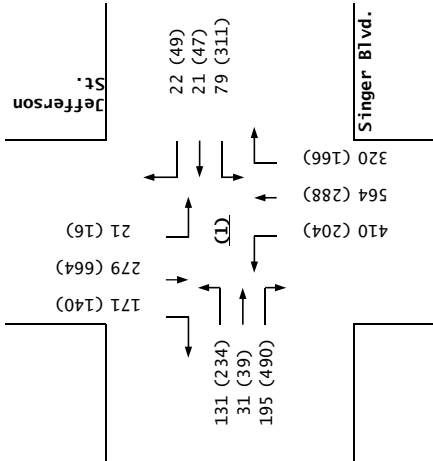
200 192 P.M.

2019 AM Peak Hr. Volumes

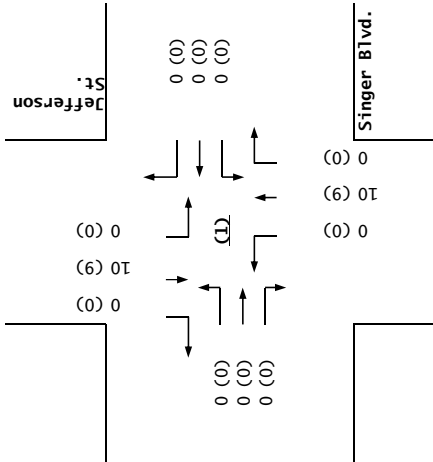
2019 PM Peak Hr. Volumes

Eastbound (Singer Blvd.)			Westbound (Singer Blvd.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
125	29	186	75	20	21	391	538	305	20	265	163
223	37	466	296	45	46	194	274	158	15	632	134

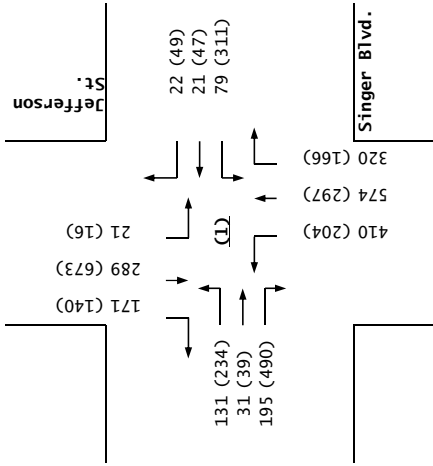
2029
NO BUILD



Trips



2029
BUILD



Singer Blvd. / Jefferson St.

Maverik Convenience Store (I-25 / Jefferson St.)

Projected Turning Movements Worksheet

I-25 N. Ramp / Jefferson St.

INTERSECTION :

E-W Street: **I-25 N. Ramp**
N-S Street: **Jefferson St.**

(2) Due to the close proximity of the ramps & Drive "A", the volumes were balanced & may not match the existing volumes.

Year of Existing Counts: 2018
Horizon Year: 2029

Growth Rates

	0.50%			0.50%			0.60%			0.50%		
	Eastbound (I-25 N. Ramp)			Westbound (I-25 N. Ramp)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	258	323	140	277	0	0	0	0	235
Background Traffic Growth	0	0	0	14	18	8	18	0	0	0	0	13
Subtotal (NO BUILD - A.M.)	0	0	0	272	341	148	295	1,227	0	0	603	248
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	5.63%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.72%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	17.69%	4.72%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	12	0	0	38	10	0	0	10	0
Total AM Peak Hour BUILD Volumes	0	0	0	284	341	148	333	1,237	0	0	613	248

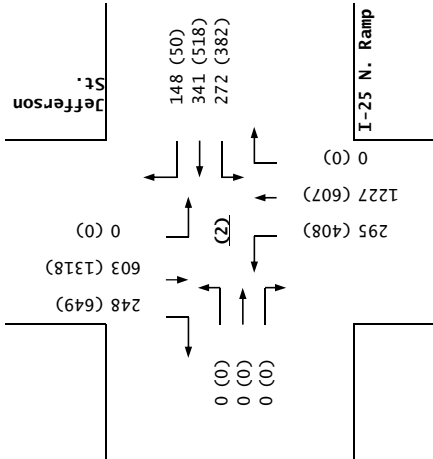
	0.50%			0.50%			0.60%			0.50%		
	Eastbound (I-25 N. Ramp)			Westbound (I-25 N. Ramp)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	362	491	47	383	0	0	0	0	615
Background Traffic Growth	0	0	0	20	27	3	25	0	0	0	0	34
Subtotal (NO BUILD - P.M.)	0	0	0	382	518	50	408	607	0	0	1,318	649
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	5.63%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.72%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	17.69%	4.72%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	11	0	0	34	9	0	0	9	0
Total PM Peak Hour BUILD Volumes	0	0	0	393	518	50	442	616	0	0	1,327	649

Number of Commercial Trips Generated

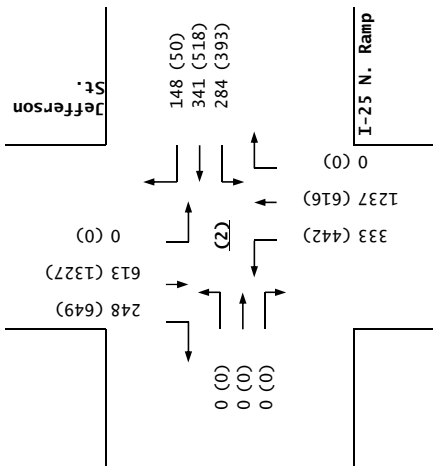
Entering	222	213	A.M.	100% Commercial Development
Exiting	200	192	P.M.	

	Eastbound (I-25 N. Ramp)			Westbound (I-25 N. Ramp)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
2019 AM Peak Hr. Volumes	0	0	0	259	325	141	279	0	0	0	0	236
2019 PM Peak Hr. Volumes	0	0	0	364	493	47	385	0	0	0	0	618

2029
NO BUILD



2029
BUILD



I-25 N. Ramp / Jefferson St.

Maverik Convenience Store (I-25 / Jefferson St.)

Projected Turning Movements Worksheet

I-25 S. Ramp / Jefferson St.

INTERSECTION :

 E-W Street: **I-25 S. Ramp**

(3) Due to the close proximity of the ramps & Drive "A", the volumes were balanced & may not match the existing volumes.

 N-S Street: **Jefferson St.**

Year of Existing Counts

2018

Horizon Year

2029

Growth Rates

0.50%

0.50%

0.50%

0.60%

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total AM Peak Hour BUILD Volumes

Eastbound (I-25 S. Ramp)			Westbound (I-25 S. Ramp)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
760	304	177	0	0	0	0	682	203	101	464	0
42	17	10	0	0	0	0	38	11	7	31	0
802	321	187	0	0	0	0	720	214	108	495	0
0.00%	0.00%	17.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.35%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	22.41%	5.63%	0.00%	0.00%	0.00%
0	0	39	0	0	0	0	48	12	0	23	0
802	321	226	0	0	0	0	768	226	108	518	0

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

Eastbound (I-25 S. Ramp)			Westbound (I-25 S. Ramp)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
480	654	208	0	0	0	0	482	356	301	935	0
26	36	11	0	0	0	0	27	20	20	62	0
506	690	219	0	0	0	0	509	376	321	997	0
0.00%	0.00%	17.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.35%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	22.41%	5.63%	0.00%	0.00%	0.00%
0	0	35	0	0	0	0	43	11	0	21	0
506	690	254	0	0	0	0	552	387	321	1,018	0

Number of Commercial Trips Generated

Entering

Exiting

222

213

A.M.

100% Commercial Development

200

192

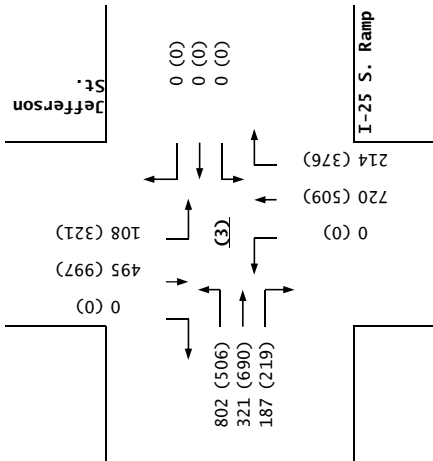
P.M.

2019 AM Peak Hr. Volumes

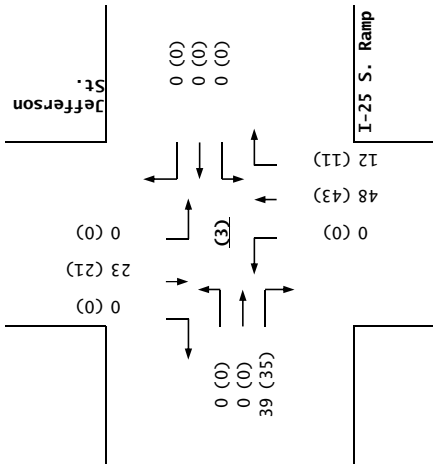
2019 PM Peak Hr. Volumes

Eastbound (I-25 S. Ramp)			Westbound (I-25 S. Ramp)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
764	306	178	0	0	0	0	685	204	102	467	0
482	657	209	0	0	0	0	484	358	303	941	0

2029
NO BUILD

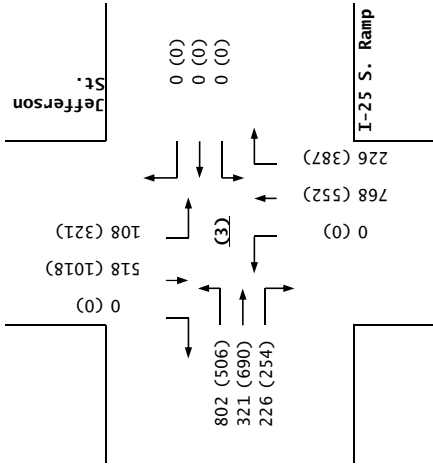


Trips



I-25 S. Ramp / Jefferson St.

2029
BUILD



Maverik Convenience Store (I-25 / Jefferson St.)

Projected Turning Movements Worksheet

McLeod Rd. / Jefferson St.

INTERSECTION :

E-W Street: **McLeod Rd.**
N-S Street: **Jefferson St.**

(4) Due to the close proximity of the ramps & Drive "A", the volumes were balanced & may not match the existing volumes.

Year of Existing Counts: 2018
Horizon Year: 2029

Growth Rates

	0.50%			0.50%			0.50%			0.50%		
	Eastbound (McLeod Rd.)			Westbound (McLeod Rd.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	10	46	17	88	29	367	17	442	25	205	372	25
Background Traffic Growth	1	3	1	5	2	20	1	24	1	11	20	1
Subtotal (NO BUILD - A.M.)	11	49	18	93	31	387	18	466	26	216	392	26
Percent Commercial Trips Generated(Entering)	1.70%	0.00%	0.00%	0.00%	0.00%	36.49%	0.00%	33.05%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	36.49%	33.05%	1.70%
Total Trips Generated	4	0	0	0	0	81	0	73	0	78	70	4
Total AM Peak Hour BUILD Volumes	15	49	18	93	31	468	18	539	26	294	462	30

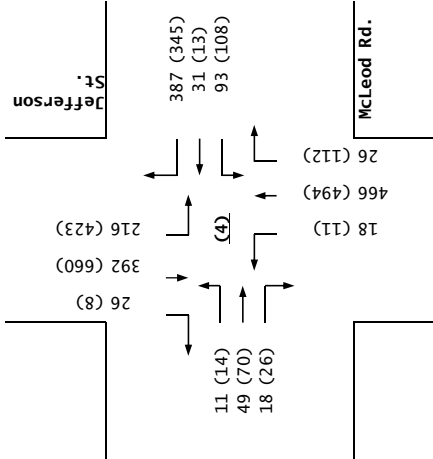
	Eastbound (McLeod Rd.)			Westbound (McLeod Rd.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	13	66	25	102	12	327	10	468	106	401	626	8
Background Traffic Growth	1	4	1	6	1	18	1	26	6	22	34	0
Subtotal (NO BUILD - P.M.)	14	70	26	108	13	345	11	494	112	423	660	8
Percent Commercial Trips Generated(Entering)	1.70%	0.00%	0.00%	0.00%	0.00%	36.49%	0.00%	33.05%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	36.49%	33.05%	1.70%
Total Trips Generated	3	0	0	0	0	73	0	66	0	70	63	3
Total PM Peak Hour BUILD Volumes	17	70	26	108	13	418	11	560	112	493	723	11

Number of Commercial Trips Generated

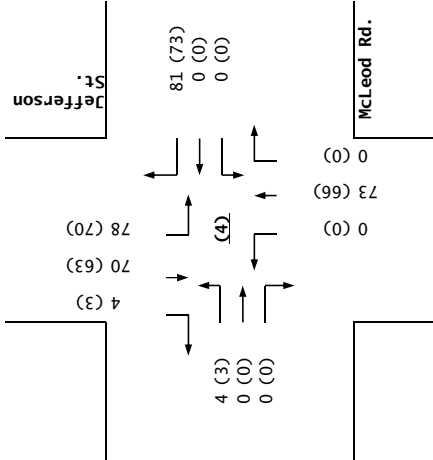
Entering	222	213	A.M.	100% Commercial Development
Exiting	200	192	P.M.	

	Eastbound (McLeod Rd.)			Westbound (McLeod Rd.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
2019 AM Peak Hr. Volumes	10	46	17	88	29	369	17	444	25	206	374	25
2019 PM Peak Hr. Volumes	13	66	25	103	12	329	10	470	107	403	629	8

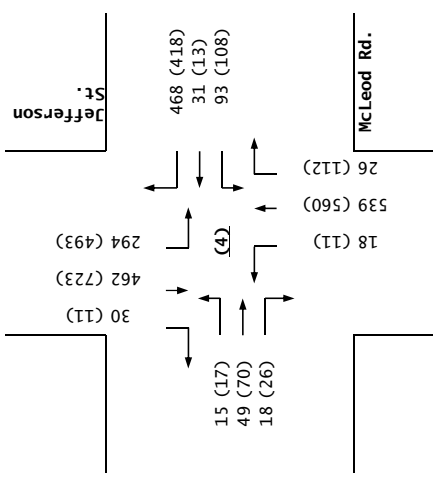
2029
NO BUILD



Trips



2029
BUILD



McLeod Rd. / Jefferson St.

Maverik Convenience Store (I-25 / Jefferson St.)

Projected Turning Movements Worksheet

Outback Dr. / Jefferson St.

INTERSECTION :

E-W Street: **Outback Dr.**

(5)

N-S Street: **Jefferson St.**

Year of Existing Counts

2018

Horizon Year

2029

Growth Rates

0.50%

0.50%

0.50%

0.50%

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total AM Peak Hour BUILD Volumes

Eastbound (Outback Dr.)			Westbound (Outback Dr.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
1	0	2	0	0	0	6	873	0	0	616	12
0	0	0	0	0	0	0	48	0	0	34	1
1	0	2	0	0	0	6	921	0	0	650	13
0.73%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	71.24%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	71.24%	0.73%
2	0	0	0	0	0	0	158	0	0	152	2
3	0	2	0	0	0	6	1,079	0	0	802	15

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

Eastbound (Outback Dr.)			Westbound (Outback Dr.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
4	0	13	0	0	0	10	820	0	0	1,027	28
0	0	1	0	0	0	1	45	0	0	56	2
4	0	14	0	0	0	11	865	0	0	1,083	30
0.73%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	71.24%	0.00%	0.00%	0.00%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	71.24%	0.73%
1	0	0	0	0	0	0	142	0	0	137	1
5	0	14	0	0	0	11	1,007	0	0	1,220	31

Number of Commercial Trips Generated

Entering Exiting

222 213 A.M.

100% Commercial Development

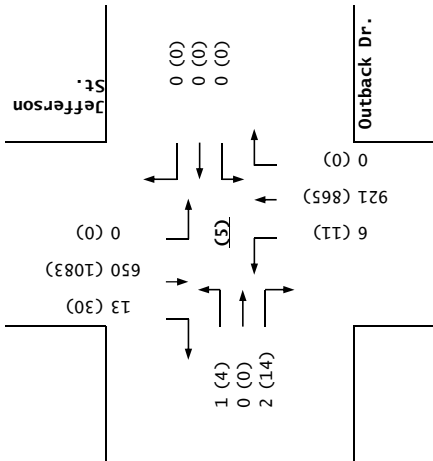
200 192 P.M.

2019 AM Peak Hr. Volumes

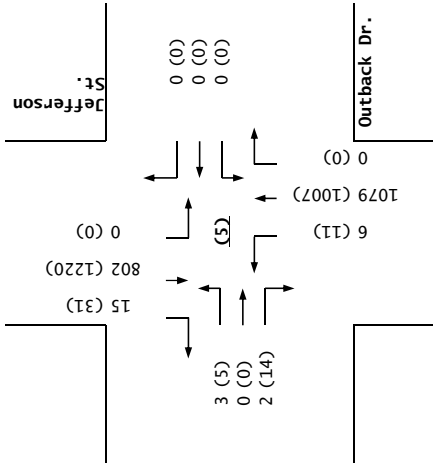
2019 PM Peak Hr. Volumes

Eastbound (Outback Dr.)			Westbound (Outback Dr.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
1	0	2	0	0	0	6	877	0	0	619	12
4	0	13	0	0	0	10	824	0	0	1,032	28

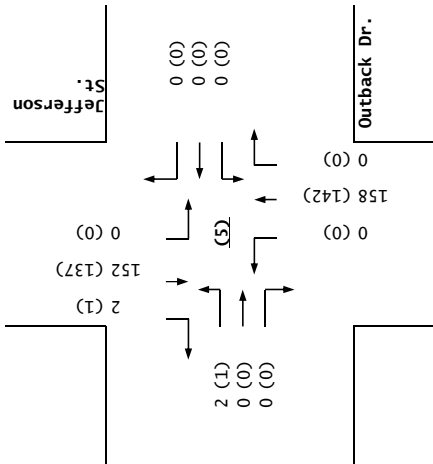
2029
NO BUILD



2029
BUILD



Outback Dr. / Jefferson St.



Maverik Convenience Store (I-25 / Jefferson St.)

Projected Turning Movements Worksheet

Driveway "A" / Jefferson St.

INTERSECTION :

E-W Street: **Driveway "A"**

(6)

N-S Street: **Jefferson St.**

Year of Existing Counts

2018

Horizon Year

2029

Growth Rates

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total AM Peak Hour BUILD Volumes

0.50%				0.50%				0.50%				0.50%			
Eastbound (Driveway "A")				Westbound (Driveway "A")				Northbound (Jefferson St.)				Southbound (Jefferson St.)			
Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right	
0	0	0	0	17	0	40	0	0	0	15	0	35	0	0	0
0	0	0	0	1	0	2	0	0	0	1	0	2	0	0	0
0	0	0	0	18	0	42	0	0	934	16	0	37	645	0	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.60%	22.44%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	28.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	0	0	0	0	0	0	0	0	60	0	0	0	12	50	0
0	0	0	0	18	0	42	0	0	994	16	0	37	657	50	0

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

0.50%				0.50%				0.50%				0.50%			
Eastbound (Driveway "A")				Westbound (Driveway "A")				Northbound (Jefferson St.)				Southbound (Jefferson St.)			
Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right	
0	0	0	0	15	0	37	0	0	0	14	0	34	0	0	0
0	0	0	0	1	0	2	0	0	0	1	0	2	0	0	0
0	0	0	0	16	0	39	0	0	885	15	0	36	1,180	0	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.60%	22.44%	0.00%
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	28.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	0	0	0	0	0	0	0	0	54	0	0	0	11	45	0
0	0	0	0	16	0	39	0	0	939	15	0	36	1,191	45	0

Number of Commercial Trips Generated

Entering Exiting

222 213 A.M.

100% Commercial Development

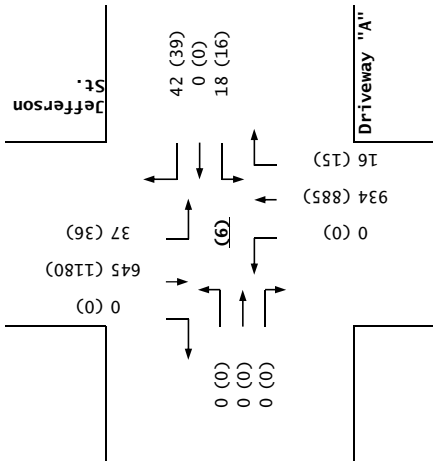
200 192 P.M.

2019 AM Peak Hr. Volumes

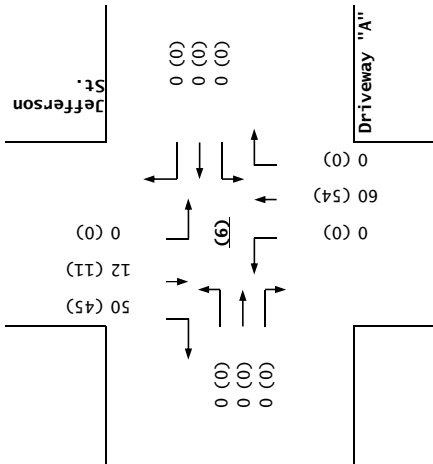
2019 PM Peak Hr. Volumes

Eastbound (Driveway "A")				Westbound (Driveway "A")				Northbound (Jefferson St.)				Southbound (Jefferson St.)			
0	0	0	0	17	0	40	0	0	0	15	0	35	0	0	0
0	0	0	0	15	0	37	0	0	0	14	0	34	0	0	0

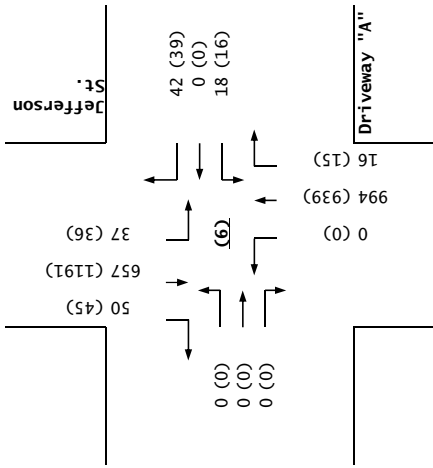
2029
NO BUILD



Trips



2029
BUILD



Driveway "A" / Jefferson St.

Maverik Convenience Store (I-25 / Jefferson St.)

Projected Turning Movements Worksheet

Driveway "B" / Jefferson St.

INTERSECTION :

E-W Street: **Driveway "B"**

(7)

N-S Street: **Jefferson St.**

Year of Existing Counts

2018

Horizon Year

2029

Growth Rates

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - A.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total AM Peak Hour BUILD Volumes

0.50%			0.50%			0.50%			0.50%		
Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	922	0	0	663	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	71.97%	0.00%	0.00%	0.00%	0.00%	5.60%
28.04%	0.00%	71.97%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
60	0	153	0	0	0	160	0	0	0	0	12
60	0	153	0	0	0	160	922	0	0	663	12

Existing Volumes

Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

0.50%			0.50%			0.50%			0.50%		
Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	869	0	0	1,113	0
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	71.97%	0.00%	0.00%	0.00%	0.00%	5.60%
28.04%	0.00%	71.97%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
54	0	138	0	0	0	144	0	0	0	0	11
54	0	138	0	0	0	144	869	0	0	1,113	11

Number of Commercial Trips Generated

Entering Exiting

222 213 A.M.

100% Commercial Development

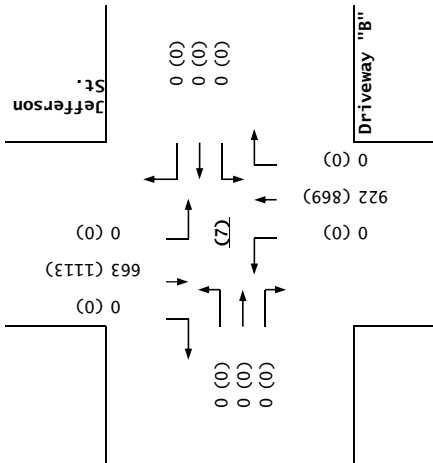
200 192 P.M.

2019 AM Peak Hr. Volumes

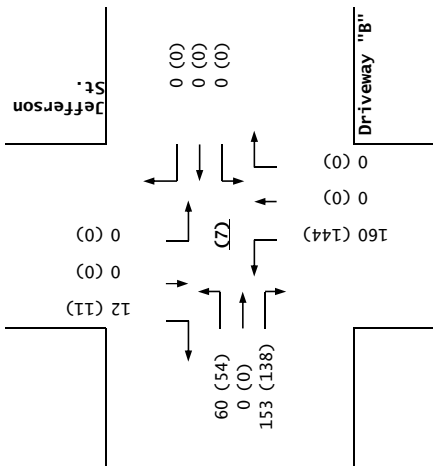
2019 PM Peak Hr. Volumes

Eastbound (Driveway "B")			Westbound (Driveway "B")			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

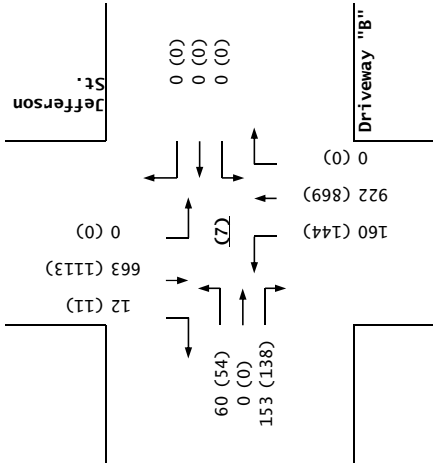
2029
NO BUILD



Trips



2029
BUILD



Driveway "B" / Jefferson St.

Timings
1: Jefferson St. & Singer Blvd.

Terry O. Brown, PE
12/18/2018

EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
125	29	186	75	20	391	538	305	20	265
125	29	186	75	20	391	538	305	20	265
Prot	NA	pm+ov	Prot	NA	pm+pt	NA	Perm	pm+pt	NA
7	4	5	3	8	5	2	2	6	6
7	4	5	3	8	5	2	2	1	6
5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0
25.0	30.0	35.0	21.0	26.0	35.0	50.0	50.0	17.0	32.0
21.2%	25.4%	29.7%	17.8%	22.0%	29.7%	42.4%	42.4%	14.4%	27.1%
4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
13.2	11.7	38.5	7.9	6.3	58.2	47.1	47.1	37.5	31.4
0.14	0.13	0.41	0.09	0.07	0.63	0.51	0.51	0.40	0.34
0.60	0.15	0.28	0.31	0.20	0.72	0.36	0.37	0.07	0.43
48.2	38.6	3.0	44.3	28.0	16.7	15.1	2.8	11.8	22.2
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48.2	38.6	3.0	44.3	28.0	16.7	15.1	2.8	11.8	22.2
D	D	A	D	C	B	B	A	B	C
22.7	C	C	D	D	B	B	C	C	C
Intersection Summary									
Cycle Length: 118									
Actuated Cycle Length: 92.9									
Natural Cycle: 80									
Control Type: Semi Act-Uncoordinated									
Maximum v/c Ratio: 0.72									
Intersection Signal Delay: 17.5									
Intersection Capacity Utilization 60.3%									
Analysis Period (min) 15									
Splits and Phases: 1: Jefferson St. & Singer Blvd.									
01	02	03	04	05	06	07	08	09	10
01	02	03	04	05	06	07	08	09	10

2019 AM Peak NOBUILD Conditions - Existing Geometry
Synchro 10 Report
2019ANX.syn

HCM 6th Signalized Intersection Summary
1: Jefferson St. & Singer Blvd.

Terry O. Brown, PE
12/18/2018

EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
125	29	186	75	20	391	538	305	20	265
125	29	186	75	20	391	538	305	20	265
Prot	NA	pm+ov	Prot	NA	pm+pt	NA	Perm	pm+pt	NA
7	4	5	3	8	5	2	2	6	6
7	4	5	3	8	5	2	2	1	6
5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0
25.0	30.0	35.0	21.0	26.0	35.0	50.0	50.0	17.0	32.0
21.2%	25.4%	29.7%	17.8%	22.0%	29.7%	42.4%	42.4%	14.4%	27.1%
4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
13.2	11.7	38.5	7.9	6.3	58.2	47.1	47.1	37.5	31.4
0.14	0.13	0.41	0.09	0.07	0.63	0.51	0.51	0.40	0.34
0.60	0.15	0.28	0.31	0.20	0.72	0.36	0.37	0.07	0.43
48.2	38.6	3.0	44.3	28.0	16.7	15.1	2.8	11.8	22.2
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48.2	38.6	3.0	44.3	28.0	16.7	15.1	2.8	11.8	22.2
D	D	A	D	C	B	B	A	B	C
22.7	C	C	D	D	B	B	C	C	C
Intersection Summary									
Cycle Length: 118									
Actuated Cycle Length: 92.9									
Natural Cycle: 80									
Control Type: Semi Act-Uncoordinated									
Maximum v/c Ratio: 0.72									
Intersection Signal Delay: 17.5									
Intersection Capacity Utilization 60.3%									
Analysis Period (min) 15									
Splits and Phases: 1: Jefferson St. & Singer Blvd.									
01	02	03	04	05	06	07	08	09	10
01	02	03	04	05	06	07	08	09	10

2019 AM Peak NOBUILD Conditions - Existing Geometry
Synchro 10 Report
2019ANX.syn

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations	4↑	4↑	4↑	4↑	4↑	4↑	4↑
Traffic Volume (vph)	259	325	141	279	1170	569	236
Future Volume (vph)	259	325	141	279	1170	569	236
Turn Type	Perm	NA	Perm	pm-pt	NA	NA	Perm
Protected Phases	8	8	8	5	2	6	6
Permitted Phases	8	8	8	5	2	6	6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	10.0	21.0	21.0	21.0
Total Split (s)	27.0	27.0	27.0	18.0	63.0	45.0	45.0
Total Split (%)	30.0%	30.0%	30.0%	20.0%	70.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag				Lead	Lead	Lag	Lag
Lead-Lag Optimize?							
Recall Mode				Min	Min	C-Max	C-Max
Act Eff Green (s)	19.3	19.3	19.3	60.7	60.7	44.1	44.1
Actuated g/C Ratio	0.21	0.21	0.21	0.67	0.67	0.49	0.49
v/c Ratio	0.87	0.87	0.42	0.64	0.60	0.40	0.33
Control Delay	42.0	37.0	18.4	15.9	9.9	16.3	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	42.0	37.0	18.4	15.9	10.1	16.3	7.1
LOS	D	D	B	B	B	B	A
Approach Delay							
Approach LOS							
Intersection Summary							
Cycle Length: 90							
Actuated Cycle Length: 90							
Offset: 0.9 (1%), Referenced to phase 2-NBTL and 6-SBT, Start of Green							
Natural Cycle: 60							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 0.67							
Intersection Signal Delay: 17.6							
Intersection Capacity Utilization 56.6%							
Analysis Period (min) 15							
Splits and Phases: 2: Jefferson St. & I-25 W. Ramp							
EB 2	05	06 (R)	08				
WB 2							

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				4↑	4↑	4↑	4↑	4↑	4↑	4↑	4↑	4↑
Traffic Volume (veh/h)	0	0	0	259	325	141	279	1170	0	0	569	236
Future Volume (veh/h)	0	0	0	259	325	141	279	1170	0	0	569	236
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	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	No	No	No	No	No
Adj Sat Flow, veh/h	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	235	235	235	500	500	500	500	500	500	500	500	500
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3	3	3
Cap. veh/h	325	682	289	525	2486	0	0	1889	843	0	0	0
Arrive On Green	0.18	0.18	0.18	0.23	1.00	0.00	0.00	0.00	0.54	0.54	0.54	0.54
Sat Flow, veh/h	1767	3711	1572	1767	3618	0	0	3618	1572	1572	1572	1572
Grp Volume(v), veh/h	235	500	170	336	1410	0	0	686	284	284	284	284
Grp Sat Flow(s), veh/h	1767	1856	1572	1767	1763	0	0	1763	1572	1572	1572	1572
Q Serve(g_s), s	11.3	11.4	8.9	7.9	0.0	0.0	0.0	0.0	10.1	9.2	9.2	9.2
Cycle Q Clear(g_c), s	11.3	11.4	8.9	7.9	0.0	0.0	0.0	0.0	10.1	9.2	9.2	9.2
Prop In Lane	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	325	682	289	525	2486	0	0	1889	843	0	0	0
V/C Ratio(X)	0.72	0.73	0.59	0.64	0.57	0.00	0.00	0.00	0.36	0.34	0.34	0.34
Avail Cap(c), veh/h	432	907	384	579	2486	0	0	1889	843	0	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.70	0.70	0.00	0.00	0.93	0.93	0.93	0.93	0.93
Uniform Delay (d), s/veh	34.6	34.6	33.6	6.8	0.0	0.0	0.0	12.0	11.8	11.8	11.8	11.8
Incr Delay (d2), s/veh	4.0	2.1	1.9	1.5	0.7	0.0	0.0	0.0	0.5	0.5	0.5	0.5
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(95%), veh/h	8.8	9.0	6.3	3.7	0.4	0.0	0.0	0.0	6.9	5.9	5.9	5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	38.6	36.8	35.5	8.3	0.7	0.0	0.0	12.5	12.8	12.8	12.8	12.8
LnGrp LOS	D	D	D	A	A	A	A	A	B	B	B	B
Approach Vol, veh/h				905			1746		970			
Approach Delay, s/veh				37.0			2.1		12.6			
Approach LOS				D			A		B			
Timer - Assigned Phs	2			5	6		8					
Phs Duration (G+Y+Rc), s	68.5			15.2	53.2		21.5					
Change Period (Y+Rc), s	5.0			5.0	5.0		5.0					
Max Green Setting (Gmax), s	58.0			13.0	40.0		22.0					
Max Q Clear Time (g_c+1), s	2.0			9.9	12.1		13.4					
Green Ext Time (p_c), s	16.7			0.3	6.4		3.1					
Intersection Summary												
HCM 6th Ctrl Delay				13.7								
HCM 6th LOS				B								
Notes												
User approved volume balancing among the lanes for turning movement.												

Lane Group	EBL	EBT	EBR	NBT	NBL	SBL	SBT
Lane Configurations	4↑	4↑	4↑	4↑	4↑	4↑	4↑
Traffic Volume (vph)	764	306	178	685	102	467	0
Future Volume (vph)	764	306	178	685	102	467	0
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	NA
Protected Phases	4	4	4	2	1	6	6
Permitted Phases	4	4	4	2	1	6	6
Detector Phase	4	4	4	2	1	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	10.0	21.0	21.0
Total Split (s)	43.0	43.0	43.0	34.0	13.0	47.0	47.0
Total Split (%)	47.8%	47.8%	47.8%	37.8%	14.4%	52.2%	52.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	Min	Min	Min	Min	Min	Min	Min
Act Effcd Green (s)	25.7	25.7	25.7	41.3	54.3	54.3	54.3
Actuated g/C Ratio	0.29	0.29	0.29	0.46	0.60	0.60	0.60
v/c Ratio	0.60	0.59	0.36	0.68	0.43	0.27	0.27
Control Delay	32.0	29.4	4.6	23.5	21.2	7.9	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.0	29.4	4.6	23.5	21.2	7.9	7.9
LOS	C	C	A	C	C	C	A
Approach Delay	25.0	25.0	23.5	23.5	10.2	10.2	10.2
Approach LOS	C	C	C	C	B	B	B
Intersection Summary							
Cycle Length: 90							
Actuated Cycle Length: 90							
Offset: 6.3 (7%), Referenced to phase 2/NBT and 6/SBTL, Start of Green							
Natural Cycle: 60							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 0.68							
Intersection Signal Delay: 20.8							
Intersection Capacity Utilization 56.6%							
Analysis Period (min) 15							
Splits and Phases: 3. Jefferson St. & I-25 E. Ramp							

Movement	EBL	EBT	EBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	4↑	4↑	4↑	4↑	4↑	4↑	4↑	4↑	4↑
Traffic Volume (veh/h)	764	306	178	0	0	685	204	102	467
Future Volume (veh/h)	764	306	178	0	0	685	204	102	467
Initial Q (Qb) veh	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	1.00
Parking Bus, Adj	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	No	No	No	No	No
Adj Sat Flow, veh/h	1856	1856	1856	0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	461	368	214	0	825	246	123	563	0
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh. %	3	3	3	0	3	3	3	3	0
Cap. veh/h	914	480	407	0	1390	414	338	2222	0
Arrive On Green	0.26	0.26	0.26	0.00	0.52	0.52	0.11	1.00	0.00
Sat Flow, veh/h	3534	1856	1572	0	2770	798	1767	3618	0
Grip Volume(v), veh/h	461	368	214	0	543	528	123	563	0
Grip Sat Flow(s), veh/h	1767	1856	1572	0	1763	1712	1767	1763	0
Q Serve(g_s), s	10.0	16.5	10.5	0.0	19.3	19.3	2.8	0.0	0.0
Cycle Q Clear(g_c), s	10.0	16.5	10.5	0.0	19.3	19.3	2.8	0.0	0.0
Prop In Lane	1.00	1.00	1.00	0.00	0.47	0.47	1.00	0.00	0.00
Lane Grip Cap(c), veh/h	914	480	407	0	915	889	338	2222	0
V/C Ratio(X)	0.50	0.77	0.63	0.00	0.59	0.59	0.36	0.25	0.00
Avail Cap(c), veh/h	1492	783	684	0	915	889	338	2222	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00
Upstream Filter(f)	1.00	1.00	1.00	0.00	1.00	1.00	0.88	0.88	0.00
Uniform Delay (d), s/veh	28.4	30.9	28.6	0.0	15.0	15.0	10.4	0.0	0.0
Incr Delay (d2), s/veh	0.4	2.6	1.1	0.0	2.8	2.9	0.6	0.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOf(95%), veh/h	7.6	12.0	7.2	0.0	12.5	12.2	1.7	0.1	0.0
Unsig. Movement Delay, s/veh	28.9	33.5	29.7	0.0	17.9	18.0	11.0	0.2	0.0
LnGrip Delay(d), s/veh	28.9	33.5	29.7	0.0	17.9	18.0	11.0	0.2	0.0
LnGrip LOS	C	C	C	A	B	B	B	A	A
Approach Vol, veh/h	1043			1071			686		
Approach Delay, s/veh	30.7			17.9			2.2		
Approach LOS	C			B			A		
Timer - Assigned Phs	1	2	4	6					
Phs Duration (G+Y+Rc), s	10.0	51.7	28.3	61.7					
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0					
Max Green Setting (Gmax), s	29.0	38.0	38.0	42.0					
Max Q Clear Time (g_c+1)/4s	21.3	18.5	2.0	4.4					
Green Ext Time (p_c), s	0.1	4.1	4.8	4.4					
Intersection Summary									
HCM 6th Ctrl Delay				18.8					
HCM 6th LOS				B					
Notes									
User approved volume balancing among the lanes for turning movement.									

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	10	46	88	29	369	17	444	206
Traffic Volume (vph)	10	46	88	29	369	17	444	206
Future Volume (vph)	10	46	88	29	369	17	444	206
Turn Type	Perim	NA	Perm	NA	pm+ov	pm+pt	NA	pm+pt
Protected Phases	4	4	8	8	1	5	2	1
Permitted Phases	4	4	8	8	2	2	6	6
Detector Phase	4	4	8	8	1	5	2	1
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	21.0	21.0	21.0	10.0	10.0	21.0	10.0	21.0
Minimum Split (s)	43.0	43.0	43.0	20.0	20.0	37.0	20.0	37.0
Total Split (%)	43.0%	43.0%	43.0%	20.0%	20.0%	37.0%	20.0%	37.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lead	Lead	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min	Min
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min
Act Effcd Green (s)	11.3	11.3	11.3	26.8	38.1	32.3	46.5	37.0
Actuated G/C Ratio	0.16	0.16	0.16	0.39	0.55	0.47	0.67	0.53
w/c Ratio	0.06	0.26	0.52	0.12	0.68	0.04	0.36	0.43
Control Delay	25.5	22.3	36.3	26.1	18.5	5.4	13.7	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.5	22.3	36.3	26.1	18.5	5.4	13.7	6.7
LOS	C	C	D	C	B	A	B	A
Approach Delay	22.8	22.2				13.4		8.6
Approach LOS	C	C				B		A
Intersection Summary								
Cycle Length: 100								
Actuated Cycle Length: 69.2								
Natural Cycle: 55								
Control Type: Semi Act-Uncoord								
Maximum w/c Ratio: 0.68								
Intersection Signal Delay: 14.6								
Intersection Capacity Utilization 52.6%								
Analysis Period (min) 15								
Splits and Phases: 4: Jefferson St. & McLeod Rd.								
	01	02	03	04	05	06	07	08
	01	02	03	04	05	06	07	08

Movement	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	10	46	88	29	369	17	444	206
Traffic Volume (veh/h)	10	46	88	29	369	17	444	206
Future Volume (veh/h)	10	46	88	29	369	17	444	206
Initial Q (Qb), veh	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, Adj)	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
Work Zone On Approach	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	12	58	21	110	36	461	21	555
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh. %	3	3	3	3	3	3	3	3
Cap, veh/h	344	386	140	437	551	643	525	1367
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	893	1300	471	1309	1856	1572	1767	3395
Grip Volume(v), veh/h	12	0	79	110	36	461	21	288
Grip Sat Flow(s), veh/h	893	0	1771	1309	1856	1572	1767	3395
Q Serve(g, s), s	0.8	0.0	2.6	5.4	1.1	19.5	0.5	9.3
Cycle Q Clear(g, c), s	1.9	0.0	2.6	8.0	1.1	19.5	0.5	9.3
Prop In Lane	1.00	0.27	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	344	0	526	437	551	643	525	1367
V/C Ratio(X)	0.03	0.00	0.15	0.25	0.07	0.72	0.04	0.41
Avail Cap(c, a), veh/h	505	0	847	574	887	927	747	710
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.7	0.0	20.5	23.5	20.0	19.7	11.6	17.0
Incr Delay (d2), s/veh	0.0	0.0	0.1	0.3	0.0	1.5	0.0	1.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/m	0.3	0.0	1.9	3.0	0.8	11.2	0.3	7.0
Unsig. Movement Delay, s/veh	20.7	0.0	20.7	23.8	20.1	21.2	11.6	18.6
LnGrp Delay(d), s/veh	20.7	0.0	20.7	23.8	20.1	21.2	11.6	18.6
LnGrp LOS	C	A	C	C	C	B	B	B
Approach Vol, veh/h	91					607		757
Approach Delay, s/veh	20.7					21.6		14.0
Approach LOS	C					B		B
Timer - Assigned Phs	1	2	4	5	6	8		
Phs Duration (G+Y+Rc), s/veh	37.0	28.6	10.0	40.9	28.6			
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0			
Max Green Setting (Gmax), s	32.0	38.0	15.0	32.0	38.0			
Max Q Clear Time (g_c+1)85	11.3	4.6	2.5	9.1	21.5			
Green Ext Time (p_c), s	3.5	0.5	0.0	3.0	2.1			
Intersection Summary								
HCM 6th Ctrl Delay	17.8							
HCM 6th LOS	B							

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑↑	↑↑	
Traffic Vol, veh/h	1	2	6	877	619	12
Future Vol, veh/h	1	2	6	877	619	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	83	83	83	83	83	83
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1	2	7	1057	746	14

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1296	380	760	0	-	0
Stage 1	753	-	-	-	-	-
Stage 2	543	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	254	*827	1159	-	-	-
Stage 1	723	-	-	-	-	-
Stage 2	543	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	251	*827	1159	-	-	-
Mov Cap-2 Maneuver	251	-	-	-	-	-
Stage 1	712	-	-	-	-	-
Stage 2	543	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.7	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1159	-	469	-	-
HCM Lane V/C Ratio	0.006	-	0.008	-	-
HCM Control Delay (s)	8.1	0.1	12.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

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

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱			↕			↕			↕	↰
Traffic Vol, veh/h	0	0	0	17	1	40	1	889	15	35	610	1
Future Vol, veh/h	0	0	0	17	1	40	1	889	15	35	610	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	35	-	-	-	-	-	-	-	-	-	-	75
Veh in Median Storage, #	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	20	1	48	1	1071	18	42	735	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1357	1910	368	1534	1902	545	736	0	0	1089	0	0
Stage 1	819	819	-	1082	1082	-	-	-	-	-	-	-
Stage 2	538	1091	-	452	820	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	192	82	*827	*129	84	480	1191	-	-	631	-	-
Stage 1	636	588	-	*230	290	-	-	-	-	-	-	-
Stage 2	492	287	-	*780	587	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	-	-	-	-	-	-
Mov Cap-1 Maneuver	155	73	*827	*118	74	480	1191	-	-	631	-	-
Mov Cap-2 Maneuver	155	73	-	*118	74	-	-	-	-	-	-	-
Stage 1	635	521	-	*230	289	-	-	-	-	-	-	-
Stage 2	440	286	-	*692	521	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	25.9	0	1.2
HCM LOS	A	D		


Minor Lane/Major Mvmt	NBL	NBT	NBF	EBLn	EBLn	WBLn	SBL	SBT	SBR
Capacity (veh/h)	1191	-	-	-	-	241	631	-	-
HCM Lane V/C Ratio	0.001	-	-	-	-	0.29	0.067	-	-
HCM Control Delay (s)	8	0	-	0	0	25.9	11.1	0.6	-
HCM Lane LOS	A	A	-	A	A	D	B	A	-
HCM 95th %tile Q(veh)	0	-	-	-	-	1.2	0.2	-	-

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

Intersection

Int Delay, s/veh 0

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations 

Traffic Vol, veh/h 1 1 1 878 631 1

Future Vol, veh/h 1 1 1 878 631 1

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 83 83 83 83 83 83

Heavy Vehicles, % 3 3 3 3 3 3

Mvmt Flow 1 1 1 1058 760 1

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 1292 381 761 0 - 0

Stage 1 761 - - - - -

Stage 2 531 - - - - -

Critical Hdwy 6.86 6.96 4.16 - - -

Critical Hdwy Stg 1 5.86 - - - - -

Critical Hdwy Stg 2 5.86 - - - - -

Follow-up Hdwy 3.53 3.33 2.23 - - -

Pot Cap-1 Maneuver 257 *827 1158 - - -

Stage 1 715 - - - - -

Stage 2 551 - - - - -

Platoon blocked, % 1 1 1 - - -

Mov Cap-1 Maneuver 256 *827 1158 - - -

Mov Cap-2 Maneuver 256 - - - - -

Stage 1 713 - - - - -

Stage 2 551 - - - - -

Approach EB NB SB

HCM Control Delay, s 14.3 0 0

HCM LOS B

Minor Lane/Major Mvmt NBL NBTL EBLn1 SBT SBR

Capacity (veh/h) 1158 - 391 - -

HCM Lane V/C Ratio 0.001 - 0.006 - -

HCM Control Delay (s) 8.1 0 14.3 - -

HCM Lane LOS A A B - -

HCM 95th %tile Q(veh) 0 - 0 - -

Notes

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

Timings
1: Jefferson St. & Singer Blvd.

Terry O. Brown, PE
12/18/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1
Traffic Volume (vph)	125	29	186	75	20	391	548	305	20	275	163
Future Volume (vph)	125	29	186	75	20	391	548	305	20	275	163
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+pt	NA	Perm	pm+pt	NA	NA
Protected Phases	7	4	5	3	8	5	2	2	6	1	6
Permitted Phases	7	4	5	3	8	5	2	2	6	1	6
Detector Phase	7	4	5	3	8	5	2	2	6	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0
Total Split (s)	25.0	30.0	35.0	21.0	26.0	35.0	50.0	50.0	17.0	32.0	21.0
Total Split (%)	21.2%	25.4%	29.7%	17.8%	22.0%	28.7%	42.4%	42.4%	14.4%	27.1%	17.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimizer?											
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	13.2	11.7	38.8	7.9	6.3	58.3	47.2	47.2	37.3	31.2	31.2
Actuated g/C Ratio	0.14	0.13	0.42	0.08	0.07	0.63	0.51	0.51	0.40	0.34	0.34
v/c Ratio	0.60	0.15	0.28	0.31	0.20	0.72	0.37	0.37	0.07	0.44	0.44
Control Delay	48.3	38.7	2.9	44.4	28.0	17.0	15.1	15.1	2.8	11.8	23.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.3	38.7	2.9	44.4	28.0	17.0	15.1	15.1	2.8	11.8	23.1
LOS	D	D	A	D	C	B	B	B	A	B	C
Approach Delay	22.7			38.6			12.7			22.6	
Approach LOS	C			D			B			C	
Intersection Summary											
Cycle Length: 118											
Actuated Cycle Length: 93											
Natural Cycle: 80											
Control Type: Semi Act-Uncoordinated											
Maximum v/c Ratio: 0.72											
Intersection Signal Delay: 17.8											
Intersection Capacity Utilization: 60.6%											
Analysis Period (min): 15											
Spills and Phases:	1: Jefferson St. & Singer Blvd.										
	D01	D02	D03	D04	D05	D06	D07	D08	D09	D10	D11
	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

2019 AM Peak BUILD Conditions - Existing Geometry
Synchro 10 Report
2019ABX.syn

HCM 6th Signalized Intersection Summary
1: Jefferson St. & Singer Blvd.

Terry O. Brown, PE
12/18/2018

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1
Traffic Volume (veh/h)	125	29	186	75	20	391	548	305	20	275	163
Future Volume (veh/h)	125	29	186	75	20	391	548	305	20	275	163
Initial Q (Obs.) veh	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	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
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	149	35	221	89	24	25	465	652	0	24	327
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3	3
Cap. veh/h	191	263	511	196	160	143	648	1815	485	835	485
Arrive On Green	0.11	0.14	0.14	0.06	0.09	0.09	0.18	0.51	0.00	0.06	0.39
Sat Flow, veh/h	1767	1856	1572	3428	1763	1572	1767	3526	1572	1767	2147
Grip Volume(v), veh/h	149	35	221	89	24	25	465	652	0	24	267
Grip Sat Flow(s), veh/h	1767	1856	1572	1714	1763	1572	1767	1763	1572	1767	1763
Q Serve(g, s)	7.2	1.4	9.6	2.2	1.1	1.3	12.6	9.6	0.0	0.7	9.5
Cycle Q Clear(g, c), s	7.2	1.4	9.6	2.2	1.1	1.3	12.6	9.6	0.0	0.7	9.5
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grip Cap(c), veh/h	191	263	511	196	160	143	648	1815	485	835	485
V/C Ratio(X)	0.78	0.13	0.43	0.45	0.15	0.17	0.72	0.36	0.05	0.39	0.40
Avail Cap(c), veh/h	404	531	738	628	424	378	931	1815	626	886	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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	32.8	23.2	39.9	36.6	36.7	11.4	12.6	0.0	13.6	19.2
Incr Delay (d2), s/veh	6.8	0.2	0.6	1.6	0.4	0.6	1.5	0.6	0.0	0.0	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
%ile BackOfQ(95%), veh/m	6.1	1.2	6.4	1.7	0.9	0.9	8.1	6.5	0.0	0.5	7.3
Unsig. Movement Delay, s/veh											
LnGrp Delay(d), s/veh	44.7	33.0	23.8	41.5	37.0	37.3	13.0	13.2	0.0	13.6	20.9
LnGrp LOS	D	C	C	D	D	D	B	B	B	C	C
Approach Vol, veh/h	405			138			1117			545	
Approach Delay, s/veh	32.3			40.0			13.1			20.7	
Approach LOS	C			D			B			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8			
Phs Duration (G+Y+Rc), s/10.0	50.0	10.0	17.4	21.0	39.0	14.4	12.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax)2s0	45.0	16.0	25.0	30.0	27.0	20.0	21.0				
Max Q Clear Time (g_c+1)2s9	11.6	4.2	11.6	14.6	11.8	9.2	3.3				
Green Ext Time (p_c), s	0.0	5.1	0.2	0.7	1.4	2.9	0.3	0.2			
Intersection Summary											
HCM 6th Grd Delay	20.2										
HCM 6th LOS	C										
Notes											
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.											

2019 AM Peak BUILD Conditions - Existing Geometry
Synchro 10 Report
2019ABX.syn

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations	4↑	↑	↑	↑	↑↑	↑↑	↑
Traffic Volume (vph)	271	325	141	316	1180	579	236
Future Volume (vph)	271	325	141	316	1180	579	236
Turn Type	Perm	NA	Perm	pm+pt	NA	NA	Perm
Protected Phases	8	8	8	2	2	6	6
Permitted Phases	8	8	8	5	2	6	6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	10.0	21.0	21.0	21.0
Total Split (s)	27.0	27.0	27.0	18.0	63.0	45.0	45.0
Total Split (%)	30.0%	30.0%	30.0%	20.0%	70.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?							
Recall Mode	Min	Min	Min	Min	C-Max	C-Max	C-Max
Act Effct Green (s)	19.5	19.5	19.5	60.5	60.5	43.2	43.2
Actuated g/C Ratio	0.22	0.22	0.22	0.67	0.67	0.48	0.48
Actuated v/C Ratio	0.67	0.68	0.42	0.72	0.60	0.42	0.34
Control Delay	42.3	37.2	18.3	20.8	10.1	16.9	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	42.3	37.2	18.3	20.8	10.3	16.9	8.3
LOS	D	D	B	C	B	B	A
Approach Delay	34.9				12.5	14.4	
Approach LOS	C				B	B	
Intersection Summary							
Cycle Length: 90							
Actuated Cycle Length: 90							
Offset: 0.9 (1%), Referenced to phase 2:NBLT and 6:SBT, Start of Green							
Natural Cycle: 60							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 0.72							
Intersection Signal Delay: 18.4							Intersection LOS: B
Intersection Capacity Utilization 58.3%							ICU Level of Service B
Analysis Period (min) 15							

Movement	EBL	EBT	EBL	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	271	325	141	316	1180	0	0	579	236
Future Volume (veh/h)	0	0	0	271	325	141	316	1180	0	0	579	236
Initial Q (Qb), veh				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	1.00
Parking Bus, Adj				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	No	No	No	No	No
Adj Sat Flow, veh/hln	1856	1856	1856	1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h	240	240	240	514	170	381	1422	0	0	0	698	284
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	0	0	3	3
Cap, veh/h	331	695	295	536	2473	0	0	1815	810	0	1815	810
Arrive On Green	0.19	0.19	0.19	0.26	1.00	0.00	0.00	0.00	0.00	0.51	0.51	0.51
Sat Flow, veh/h	1767	3711	1572	1767	3618	0	0	3618	1572	0	3618	1572
Grp Volume(V), veh/h	240	514	170	381	1422	0	0	698	284	0	698	284
Grp Sat Flow(s), veh/hln	1767	1856	1572	1767	1763	0	0	1763	1572	0	1763	1572
Q Served(s), s	11.5	11.8	8.9	9.6	0.0	0.0	0.0	0.0	10.8	9.6	0.0	10.8
Cycle Q Clear(g_c), s	11.5	11.3	8.9	9.6	0.0	0.0	0.0	0.0	10.8	9.6	0.0	10.8
Prop In Lane	1.00		1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00
Lane Grp Cap(c), veh/h	331	695	295	536	2473	0	0	1815	810	0	1815	810
V/C Ratio(X)	0.73	0.74	0.58	0.71	0.57	0.00	0.00	0.38	0.35	0.00	0.38	0.35
Avail Cap(c_a), veh/h	432	907	384	560	2473	0	0	1815	810	0	1815	810
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	0.64	0.64	0.00	0.00	0.93	0.93	0.00	0.93	0.93
Uniform Delay (d), s/veh	34.4	34.5	33.3	7.3	0.0	0.0	0.0	13.2	12.9	0.0	13.2	12.9
Incr Delay (d2), s/veh	4.2	2.3	1.8	2.6	0.6	0.0	0.0	0.6	1.1	0.0	0.6	1.1
Initial Q Delay(q03), 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 Back(Q(95%)), veh/h	9.0	9.2	6.2	4.5	0.4	0.0	0.0	7.4	6.2	0.0	7.4	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	38.6	36.8	35.1	9.9	0.6	0.0	0.0	13.8	14.0	0.0	13.8	14.0
LnGrp LOS	D	D	D	A	A	A	A	A	A	A	B	B
Approach Vol, veh/h				924				1803			982	
Approach Delay, s/veh				37.0				2.6			13.9	
Approach LOS				D				A			B	
Timer - Assigned Phs	2	5	6					3				
Phs Duration (G+Y+Rc), s	68.1	16.8	51.3					21.9				
Change Period (Y+Rc), s	5.0	5.0	5.0					5.0				
Max Green Setting (Gmax), s	58.0	13.0	40.0					22.0				
Max Q Clear Time (g_c+1), s	2.0	11.6	12.8					13.8				
Green Ext Time (p_c), s	17.0	0.2	6.5					3.1				
Intersection Summary												
HCM 6th Ctrl Delay	14.1											
HCM 6th LOS	B											
Notes												
User approved volume balancing among the lanes for turning movement.												

Timings 3: Jefferson St. & I-25 E. Ramp

Terry O. Brown, PE
12/18/2018

Lane Group	EBL	EBT	EBR	NBT	NBL	SBL	SBT
Lane Configurations	4	4	4	4	4	4	4
Traffic Volume (vph)	764	306	217	732	102	490	
Future Volume (vph)	764	306	217	732	102	490	
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	
Protected Phases	4			2	1	6	
Permitted Phases	4	4	4	2	1	6	
Detector Phase	4	4	4	2	1	6	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	21.0	21.0	21.0	10.0	10.0	21.0	
Total Split (s)	43.0	43.0	43.0	34.0	13.0	47.0	
Total Split (%)	47.8%	47.8%	47.8%	37.8%	14.4%	52.2%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	Min	Min	Min	Min	Min	Min	
Act Effcd Green (s)	26.5	26.5	26.5	40.6	53.5	53.5	
Actuated g/C Ratio	0.29	0.29	0.29	0.45	0.59	0.59	
v/c Ratio	0.58	0.58	0.43	0.74	0.47	0.28	
Control Delay	30.8	28.5	7.4	25.5	25.9	8.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	30.8	28.5	7.4	25.5	25.9	8.3	
LOS	C	C	A	C	C	A	
Approach Delay							
Approach LOS	C	C	C	C	B	B	
Intersection Summary							
Cycle Length: 90							
Actuated Cycle Length: 90							
Offset: 6.3 (7%), Referenced to phase 2:NBT and 6:SBTL, Start of Green							
Natural Cycle: 60							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 0.74							
Intersection Signal Delay: 21.5							
Intersection Capacity Utilization 58.3%							
Analysis Period (min) 15							
Splits and Phases: 3: Jefferson St. & I-25 E. Ramp							

HCM 6th Signalized Intersection Summary 3: Jefferson St. & I-25 E. Ramp

Terry O. Brown, PE
12/18/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4	4	4
Traffic Volume (veh/h)	764	306	217	0	0	0	732	216	102	490	0	
Future Volume (veh/h)	764	306	217	0	0	0	732	216	102	490	0	
Initial Q (Ob.) veh	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	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	
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No	
Adj Sat Flow, veh/h/in	1856	1856	1856	0	0	0	1856	1856	1856	1856	1856	
Adj Flow Rate, veh/h	461	368	261	0	0	0	882	260	123	590	0	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	
Percent Heavy Veh, %	3	3	3	0	0	0	3	3	3	3	0	
Cap, veh/h	920	483	409	0	0	0	1390	409	315	2216	0	
Arrive On Green	0.26	0.26	0.26	0.00	0.52	0.52	0.11	1.00	0.00	0.00	0.00	
Sat Flow, veh/h	3534	1856	1572	0	0	0	2778	750	1767	3618	0	
Grp Volume(v), veh/h	461	368	261	0	0	0	578	564	123	590	0	
Grp Sat Flow(s), veh/h/in	1767	1856	1572	0	0	0	1763	1713	1767	1763	0	
Q Serve(g_s), s	10.0	16.5	13.2	0.0	21.2	21.2	21.3	2.8	0.0	0.0	0.0	
Cycle Q Clear(g_c), s	10.0	16.5	13.2	0.0	21.2	21.2	21.3	2.8	0.0	0.0	0.0	
Prop In Lane	1.00	1.00	1.00	0.00	0.46	0.46	1.00	0.00	0.00	0.00	0.00	
Lane Grp Cap(c), veh/h	920	483	409	0	912	886	315	2216	0	0	0	
V/C Ratio(X)	0.50	0.76	0.64	0.00	0.63	0.64	0.39	0.27	0.00	0.00	0.00	
Avail Cap(c_a), veh/h	1492	783	684	0	912	886	374	2216	0	0	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	
Upstream Filter(f)	1.00	1.00	1.00	0.00	1.00	1.00	0.87	0.87	0.00	0.00	0.00	
Uniform Delay (d), s/veh	28.3	30.7	29.5	0.0	15.6	15.6	11.2	0.0	0.0	0.0	0.0	
Incr Delay (d2), s/veh	0.4	2.5	1.7	0.0	3.4	3.5	0.7	0.3	0.0	0.0	0.0	
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	
%ile BackOfQ(95%), veh/h	7.5	12.0	8.8	0.0	13.6	13.4	1.7	0.1	0.0	0.0	0.0	
Unsig. Movement Delay, s/veh	28.7	33.2	31.2	0.0	19.0	19.1	11.9	0.3	0.0	0.0	0.0	
LnGrp Delay(d), s/veh	28.7	33.2	31.2	0.0	19.0	19.1	11.9	0.3	0.0	0.0	0.0	
LnGrp LOS	C	C	C	A	B	B	B	A	A	A	A	
Approach Vol, veh/h	1090			1142			713					
Approach Delay, s/veh	30.8			19.0			2.3					
Approach LOS	C			B			A					
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s/10.0	51.6	28.4	61.6									
Change Period (Y+Rc), s	5.0	5.0	5.0									
Max Green Setting (Gmax)/80	29.0	38.0	42.0									
Max Q Clear Time (g_c+1)/48	23.3	18.5	2.0									
Green Ext Time (p_c), s	0.1	3.5	4.6									
Intersection Summary												
HCM 6th Ctrl Delay	19.3											
HCM 6th LOS	B											
Notes												
User approved volume balancing among the lanes for turning movement.												

Timings 4: Jefferson St. & McLeod Rd.

Terry O. Brown, PE
12/18/2018

EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
14	46	88	29	449	17	516	282	443
14	46	88	29	449	17	516	282	443
Perm	NA	Perm	NA	pm+ov	pm+pt	NA	pm+pt	NA
4	4	8	8	8	2	2	1	6
4	4	8	8	8	1	5	2	1
4	4	8	8	8	1	5	2	1
5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
21.0	21.0	21.0	10.0	10.0	10.0	10.0	21.0	21.0
43.0	43.0	43.0	43.0	20.0	20.0	37.0	20.0	37.0
43.0%	43.0%	43.0%	43.0%	20.0%	20.0%	37.0%	20.0%	37.0%
4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Min	Min	Min	Min	Min	Min	Min	Min	Min
11.4	11.4	11.4	30.6	37.9	32.1	51.4	40.6	40.6
0.16	0.16	0.16	0.16	0.42	0.52	0.44	0.71	0.56
0.09	0.27	0.54	0.12	0.80	0.04	0.44	0.58	0.30
26.7	23.3	38.7	27.1	25.4	5.5	15.9	8.5	9.5
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26.7	23.3	38.7	27.1	25.4	5.5	15.9	8.5	9.5
C	C	D	C	C	A	B	A	A
23.9	23.9	27.6	27.6	27.6	15.5	15.5	9.1	9.1
C	C	C	C	C	B	B	A	A
Intersection Summary								
Cycle Length: 100								
Actuated Cycle Length: 72.8								
Natural Cycle: 60								
Control Type: Semi Act-Uncoord								
Maximum v/c Ratio: 0.80								
Intersection Signal Delay: 16.9								
Intersection Capacity Utilization 59.5%								
Analysis Period (min) 15								
Splits and Phases:	4: Jefferson St. & McLeod Rd.							
01	02	03	04	05	06	07	08	09
01	02	03	04	05	06	07	08	09
01	02	03	04	05	06	07	08	09

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HCM 6th Signalized Intersection Summary 4: Jefferson St. & McLeod Rd.

Terry O. Brown, PE
12/18/2018

EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
14	46	88	29	449	17	516	282	443
14	46	88	29	449	17	516	282	443
Perm	NA	Perm	NA	pm+ov	pm+pt	NA	pm+pt	NA
4	4	8	8	8	2	2	1	6
4	4	8	8	8	1	5	2	1
4	4	8	8	8	1	5	2	1
5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
21.0	21.0	21.0	10.0	10.0	10.0	10.0	21.0	21.0
43.0	43.0	43.0	43.0	20.0	20.0	37.0	20.0	37.0
43.0%	43.0%	43.0%	43.0%	20.0%	20.0%	37.0%	20.0%	37.0%
4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Min	Min	Min	Min	Min	Min	Min	Min	Min
11.4	11.4	11.4	30.6	37.9	32.1	51.4	40.6	40.6
0.16	0.16	0.16	0.16	0.42	0.52	0.44	0.71	0.56
0.09	0.27	0.54	0.12	0.80	0.04	0.44	0.58	0.30
26.7	23.3	38.7	27.1	25.4	5.5	15.9	8.5	9.5
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26.7	23.3	38.7	27.1	25.4	5.5	15.9	8.5	9.5
C	C	D	C	C	A	B	A	A
23.9	23.9	27.6	27.6	27.6	15.5	15.5	9.1	9.1
C	C	C	C	C	B	B	A	A
Intersection Summary								
Cycle Length: 100								
Actuated Cycle Length: 72.8								
Natural Cycle: 60								
Control Type: Semi Act-Uncoord								
Maximum v/c Ratio: 0.80								
Intersection Signal Delay: 16.9								
Intersection Capacity Utilization 59.5%								
Analysis Period (min) 15								
Splits and Phases:	4: Jefferson St. & McLeod Rd.							
01	02	03	04	05	06	07	08	09
01	02	03	04	05	06	07	08	09
01	02	03	04	05	06	07	08	09

2019 AM Peak BUILD Conditions - Existing Geometry
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Intersection

Int Delay, s/veh 0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations	W			↑↑	↑↑	
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Traffic Vol, veh/h	3	2	6	1032	768	14
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Future Vol, veh/h	3	2	6	1032	768	14
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Conflicting Peds, #/hr	0	0	0	0	0	0
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Sign Control	Stop	Stop	Free	Free	Free	Free
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RT Channelized	- None		- None		- None	
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Storage Length	0	-	-	-	-	-
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Veh in Median Storage	0	-	-	0	0	-
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Grade, %	0	-	-	0	0	-
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Peak Hour Factor	83	83	83	83	83	83
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Heavy Vehicles, %	3	3	3	3	3	3
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Mvmt Flow	4	2	7	1243	925	17
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Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	1570	471	942	0	-	0
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Stage 1	934	-	-	-	-	-
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Stage 2	636	-	-	-	-	-
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Critical Hdwy	6.86	6.96	4.16	-	-	-
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Critical Hdwy Stg 1	5.86	-	-	-	-	-
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Critical Hdwy Stg 2	5.86	-	-	-	-	-
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Follow-up Hdwy	3.53	3.33	2.23	-	-	-
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Pot Cap-1 Maneuver	176	*758	1069	-	-	-
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Stage 1	670	-	-	-	-	-
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Stage 2	487	-	-	-	-	-
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Platoon blocked, %	1	1	1	-	-	-
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Mov Cap-1 Maneuver	173	*758	1069	-	-	-
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Mov Cap-2 Maneuver	173	-	-	-	-	-
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Stage 1	656	-	-	-	-	-
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Stage 2	487	-	-	-	-	-
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Approach	EB	NB	SB
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HCM Control Delay, s	19.8	0.1	0
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HCM LOS	C		
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Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
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Capacity (veh/h)	1069	-	250	-	-
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HCM Lane V/C Ratio	0.007	-	0.024	-	-
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HCM Control Delay (s)	8.4	0.1	19.8	-	-
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HCM Lane LOS	A	A	C	-	-
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HCM 95th %tile Q(veh)	0	-	0.1	-	-
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Notes

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

Intersection													
Int Delay, s/veh	1.6												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Vol, veh/h	0	0	0	17	1	40	0	949	15	35	622	50	
Future Vol, veh/h	0	0	0	17	1	40	0	949	15	35	622	50	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free	
Storage Length	-	-	-	-	-	-	-	-	-	-	-	75	
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-	
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-	
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83	
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	
Mvmt Flow	0	0	0	20	1	48	0	1143	18	42	749	60	

Major/Minor	Minor1			Major1			Major2					
Conflicting Flow All	1611	1985	581	749	0	0	1161	0	0			
Stage 1	1152	1152	-	-	-	-	-	-	-			
Stage 2	459	833	-	-	-	-	-	-	-			
Critical Hdwy	6.86	6.56	6.96	4.16	-	-	4.16	-	-			
Critical Hdwy Stg 1	5.86	5.56	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	5.86	5.56	-	-	-	-	-	-	-			
Follow-up Hdwy	3.53	4.03	3.33	2.23	-	-	2.23	-	-			
Pot Cap-1 Maneuver	94	60	454	849	-	-	592	-	0			
Stage 1	261	268	-	-	-	-	-	-	0			
Stage 2	600	379	-	-	-	-	-	-	0			
Platoon blocked, %					-	-		-				
Mov Cap-1 Maneuver	83	0	454	849	-	-	592	-	-			
Mov Cap-2 Maneuver	83	0	-	-	-	-	-	-	-			
Stage 1	261	0	-	-	-	-	-	-	-			
Stage 2	527	0	-	-	-	-	-	-	-			

Approach	WB	NB	SB
HCM Control Delay, s	33.4	0	1.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	849	-	-	195	592	-
HCM Lane V/C Ratio	-	-	-	0.358	0.071	-
HCM Control Delay (s)	0	-	-	33.4	11.5	0.6
HCM Lane LOS	A	-	-	D	B	A
HCM 95th %tile Q(veh)	0	-	-	1.5	0.2	-

Intersection						
Int Delay, s/veh	22.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑↑	↑↑	
Traffic Vol, veh/h	60	153	160	878	631	12
Future Vol, veh/h	60	153	160	878	631	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	83	83	83	83	83	83
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	72	184	193	1058	760	14

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1682	387	774	0	-	0
Stage 1	767	-	-	-	-	-
Stage 2	915	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	120	*827	1142	-	-	-
Stage 1	709	-	-	-	-	-
Stage 2	348	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	71	*827	1142	-	-	-
Mov Cap-2 Maneuver	71	-	-	-	-	-
Stage 1	418	-	-	-	-	-
Stage 2	348	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.6	2.5	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1142	-	207	-	-
HCM Lane V/C Ratio	0.169	-	1.24	-	-
HCM Control Delay (s)	8.8	1.3	188.6	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.6	-	13.4	-	-

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

Timings 1: Jefferson St. & Singer Blvd.

Terry O. Brown, PE
12/18/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	1	1	1	1	1	1	1	1	1	1
Traffic Volume (vph)	223	37	466	296	45	194	274	158	15	632
Future Volume (vph)	223	37	466	296	45	194	274	158	15	632
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+pt	NA	pm+pt	NA	NA
Protected Phases	7	4	5	3	8	5	2	2	1	6
Permitted Phases	7	4	5	3	8	5	2	2	1	6
Detector Phase	7	4	5	3	8	5	2	2	1	6
Switch Phase	7	4	5	3	8	5	2	2	1	6
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0
Total Split (s)	25.0	30.0	35.0	21.0	26.0	35.0	50.0	50.0	17.0	32.0
Total Split (%)	21.2%	25.4%	29.7%	17.8%	22.0%	29.7%	42.4%	42.4%	14.4%	27.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	17.6	10.9	39.6	13.7	7.0	58.7	47.8	47.8	35.9	30.0
Actuated g/c Ratio	0.18	0.11	0.40	0.14	0.07	0.60	0.49	0.49	0.36	0.30
v/c Ratio	0.77	0.20	0.75	0.67	0.35	0.41	0.17	0.20	0.04	0.78
Control Delay	56.2	43.7	28.9	48.4	28.6	14.1	15.1	3.0	13.0	38.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.2	43.7	28.9	48.4	28.6	14.1	15.1	3.0	13.0	38.9
LOS	E	D	C	D	C	B	B	A	B	D
Approach Delay	38.0					43.8	11.7		38.4	
Approach LOS	D					D	B		D	



Splits and Phases: 1: Jefferson St. & Singer Blvd.

HCM 6th Signalized Intersection Summary 1: Jefferson St. & Singer Blvd.

Terry O. Brown, PE
12/18/2018

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1
Traffic Volume (veh/h)	223	37	466	296	45	194	274	158	15	632	134
Future Volume (veh/h)	223	37	466	296	45	194	274	158	15	632	134
Initial Q (Qb), veh	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	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
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	240	40	501	318	48	49	209	295	0	16	680
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	272	433	513	389	340	303	351	1480	544	1082	229
Arrive On Green	0.15	0.23	0.23	0.11	0.19	0.19	0.09	0.42	0.00	0.05	0.37
Sat Flow, veh/h	1767	1856	1572	3428	1763	1572	1767	3526	1572	1767	2895
Grp Volume(v), veh/h	240	40	501	318	48	49	209	295	0	16	414
Grp Sat Flow(s), veh/h	1767	1856	1572	1714	1763	1572	1767	1763	1572	1767	1763
Q Servelg, s	14.2	1.8	25.0	9.7	2.4	2.8	7.4	5.7	0.0	0.6	20.6
Cycle Q Clear(g, c), s	14.2	1.8	25.0	9.7	2.4	2.8	7.4	5.7	0.0	0.6	20.6
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95
Lane Grp Cap(c), veh/h	272	433	513	389	340	303	351	1480	544	659	652
V/C Ratio(X)	0.88	0.09	0.98	0.82	0.14	0.16	0.60	0.20	0.03	0.63	0.63
Avail Cap(c), veh/h	330	433	513	512	345	308	681	1480	660	659	652
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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.4	32.2	35.7	46.4	35.9	36.0	19.6	19.7	0.0	18.2	27.5
Inor Delay (d2), s/veh	20.5	0.1	33.6	7.7	0.2	0.2	1.5	0.3	0.0	0.0	4.5
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
%ile BackOfQ(95%), veh/m/2.3	1.5	24.3	8.0	1.9	2.0	5.6	4.3	0.0	0.4	14.4	14.3
Unsig. Movement Delay, s/veh	64.9	32.3	69.3	54.1	36.1	36.3	21.2	20.0	0.0	18.2	32.0
LnGrp Delay(d), s/veh	E	C	E	D	D	D	C	B	B	C	C
LnGrp LOS	E	C	E	D	D	D	C	B	B	C	C
Approach Vol, veh/h	781			415			504		A		840
Approach Delay, s/veh	66.1			49.9			20.5		31.7		
Approach LOS	E	C	E	D			C		C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8			
Phs Duration (G+Y+Rc), s/10.0	50.0	17.2	30.0	15.0	45.0	21.5	25.7				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax)2s0	45.0	16.0	25.0	30.0	27.0	20.0	21.0				
Max Q Clear Time (g, c+1)2s8	7.7	11.7	27.0	9.4	22.6	16.2	4.8				
Green Ext Time (p, c), s	0.0	2.1	0.5	0.0	0.6	2.0	0.2	0.4			
Intersection Summary											
HCM 6th Ctrl Delay				43.0							
HCM 6th LOS				D							

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

Timings
2: Jefferson St. & I-25 W. Ramp

Terry O. Brown, PE
12/18/2018

Lane Group	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4
Traffic Volume (vph)	364	493	47	385	581	1244	618		
Future Volume (vph)	364	493	47	385	581	1244	618		
Turn Type	Perm	NA	Perm	pm-pt	NA	NA	Perm		
Protected Phases	8	8	8	5	2	6	6		
Permitted Phases	8	8	8	2	2	6	6		
Detector Phase	8	8	8	5	2	6	6		
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0		
Minimum Split (s)	21.0	21.0	21.0	10.0	21.0	21.0	21.0		
Total Split (s)	30.0	30.0	30.0	31.0	75.0	44.0	44.0		
Total Split (%)	28.6%	28.6%	28.6%	29.5%	71.4%	41.9%	41.9%		
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0		
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode									
Act Effcd Green (s)	23.8	23.8	23.8	71.2	71.2	43.5	43.5		
Actuated g/c Ratio	0.23	0.23	0.23	0.68	0.68	0.41	0.41		
w/c Ratio	0.81	0.81	0.12	0.90	0.26	0.90	0.91		
Control Delay	56.4	47.7	4.2	47.2	8.0	40.1	43.9		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	56.4	47.7	4.2	47.2	8.0	40.1	43.9		
LOS	E	D	A	D	A	D	D		
Approach Delay	48.1					23.6	41.4		
Approach LOS	D					C	D		
Intersection Summary									
Cycle Length: 105									
Actuated Cycle Length: 105									
Offset: 0.7 (1%), Referenced to phase 2:NBT and 6:SBT, Start of Green									
Natural Cycle: 75									
Control Type: Actuated-Coordinated									
Maximum v/c Ratio: 0.91									
Intersection Signal Delay: 38.4									
Intersection Capacity Utilization 88.2%									
Analysis Period (min) 15									



2019 PM Peak NOBUILD Conditions - Existing Geometry
Synchro 10 Report
2019PNX.syn

HCM 6th Signalized Intersection Summary
2: Jefferson St. & I-25 W. Ramp

Terry O. Brown, PE
12/18/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				4	4	4	4	4	4	4	4	4
Traffic Volume (veh/h)	0	0	0	364	493	47	385	581	0	0	1244	618
Future Volume (veh/h)	0	0	0	364	493	47	385	581	0	0	1244	618
Initial Q (Qb) veh				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	1.00
Parking Bus, Adj				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	No	No	No	No	No
Adj Sat Flow, veh/h				1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				301	634	49	405	612	0	0	1309	651
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh. %				3	3	3	3	3	0	0	3	3
Cap. veh/h				368	772	327	431	2456	0	0	1630	727
Arrive On Green				0.21	0.21	0.21	0.37	1.00	0.00	0.00	0.46	0.46
Sat Flow, veh/h				1767	3711	1572	1767	3618	0	0	3618	1572
Grp Volume(v), veh/h				301	634	49	405	612	0	0	1309	651
Grp Sat Flow(s),veh/h				1767	1856	1572	1767	1763	0	0	1763	1572
Q Serve(g, s), s				17.1	17.1	2.7	16.8	0.0	0.0	0.0	33.3	39.9
Cycle Q Clear(g, c), s				17.1	17.1	2.7	16.8	0.0	0.0	0.0	33.3	39.9
Prop In Lane				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Lane Grp Cap(c), veh/h				368	772	327	431	2456	0	0	1630	727
V/C Ratio(X)				0.82	0.82	0.15	0.94	0.25	0.00	0.00	0.80	0.90
Avail Cap(c), veh/h				421	884	374	538	2456	0	0	1630	727
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(f)				1.00	1.00	1.00	0.64	0.64	0.00	0.00	0.58	0.58
Uniform Delay (d), s/veh				39.7	39.7	34.0	20.7	0.0	0.0	0.0	24.1	25.9
Incr Delay (d2), s/veh				10.8	5.6	0.2	16.2	0.2	0.0	0.0	2.5	10.1
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOf(95%),veh/h				13.2	13.1	1.9	13.2	0.1	0.0	0.0	18.6	21.3
Unsig. Movement Delay, s/veh				50.5	45.3	34.2	36.8	0.2	0.0	0.0	26.7	36.0
LnGrp Delay(d), s/veh				D	D	C	D	A	A	A	C	D
LnGrp LOS												
Approach Vol, veh/h				984			1017				1960	
Approach Delay, s/veh				46.3			14.8				29.8	
Approach LOS				D			B				C	
Timer - Assigned Phs				2		5	6					
Phs Duration (G+Y+Rc), s				78.2		24.6	53.6				26.8	
Change Period (Y+Rc), s				5.0		5.0	5.0				5.0	
Max Green Setting (Gmax), s				70.0		26.0	39.0				25.0	
Max Q Clear Time (g_c+1), s				2.0		18.8	41.9				19.1	
Green Ext Time (g_c), s				4.9		0.8	0.0				2.7	
Intersection Summary												
HCM 6th Ctrl Delay				30.0								
HCM 6th LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												

2019 PM Peak NOBUILD Conditions - Existing Geometry
Synchro 10 Report
2019PNX.syn

Lane Group	EBL	EBT	EBR	NBT	NBL	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↖	↗	↖
Traffic Volume (vph)	482	657	209	484	303	941	941
Future Volume (vph)	482	657	209	484	303	941	941
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	NA
Protected Phases	4			2	1	6	
Permitted Phases	4	4	4			6	6
Detector Phase	4	4	4	2	1	6	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	10.0	21.0	21.0
Total Split (s)	40.0	40.0	40.0	41.0	24.0	65.0	65.0
Total Split (%)	38.1%	38.1%	38.1%	39.0%	22.9%	61.9%	61.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag Lead						
Lead-Lag Optimize?							
Recall Mode	Min	Min	Min	C-Max	Min	C-Max	
Act Effct Green (s)	33.2	33.2	33.2	40.3	61.8	61.8	
Actuated g/C Ratio	0.32	0.32	0.32	0.38	0.59	0.59	
v/c Ratio	0.79	0.78	0.39	0.68	0.81	0.49	
Control Delay	44.6	38.1	15.8	27.5	43.6	15.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	44.6	38.1	15.8	27.5	43.6	15.9	
LOS	D	D	B	C	D	B	
Approach Delay	36.4			27.5		22.6	
Approach LOS	D			C		C	
Intersection Summary							
Cycle Length: 105							
Actuated Cycle Length: 105							
Offset: 2.1 (2%), Referenced to phase 2NBT and 6SBLT, Start of Green							
Natural Cycle: 55							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 0.81							
Intersection Signal Delay: 29.2							
Intersection Capacity Utilization 88.2%							
Analysis Period (min) 15							
Intersection LOS: C							
ICU Level of Service E							

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↵↵	↵					↵↵	↵	↵	↵↵	
Traffic Volume (veh/h)	482	657	209	0	0	0	0	484	358	303	941	0
Future Volume (veh/h)	482	657	209	0	0	0	0	484	358	303	941	0
Initial Q (Obj.) veh	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
Parking Bus, Adj	1.00		1.00				1.00		1.00	1.00		1.00
Work Zone On Approach	No						No			No		
Adj Sat Flow, veh/h/ln	1856		1856				0	1856	1856	1856		0
Adj Flow Rate, veh/h	404		852				0	515	381	322		0
Peak Hour Factor	0.94		0.94				0.94	0.94	0.94	0.94		0.94
Percent Heavy Veh. %	3		3				0	3	3	3		3
Cap. veh/h	508		1066				0	859	635	439		2177
Arrive On Green	0.29		0.29				0.00	0.44	0.44	0.25		1.00
Sat Flow, veh/h	1767		3711				0	2025	1429	1767		3618
Grip Volume(v), veh/h	404		852				0	470	426	322		1001
Grip Sat Flow(s), veh/h/ln	1767		1856				0	1763	1598	1767		1763
Q Serve(g, s), s	22.2		22.3				0.0	21.2	21.2	10.6		0.0
Cycle Q Clear(g, c), s	22.2		22.3				0.0	21.2	21.2	10.6		0.0
Prop In Lane	1.00		1.00				0.00	0.89	0.89	1.00		0.00
Lane Grip Cap(c), veh/h	508		1066				0	784	711	439		2177
V/C Ratio(X)	0.80		0.80				0.00	0.60	0.60	0.73		0.46
Avail Cap(c, a), veh/h	589		1237				0	784	711	538		2177
HCM Platoon Ratio	1.00		1.00				1.00	1.00	1.00	2.00		2.00
Upstream Filter(f)	1.00		1.00				0.00	1.00	1.00	0.34		0.00
Uniform Delay (d), s/veh	34.6		34.6				0.0	22.1	22.1	13.4		0.0
Incr Delay (d2), s/veh	6.5		3.3				0.0	3.4	3.7	1.4		0.2
Initial Q Delay(d3), s/veh	0.0		0.0				0.0	0.0	0.0	0.0		0.0
%ile BackOfQ(95%),veh/ln/s	15.7		8.3				0.0	14.3	13.3	4.8		0.1
Unsig. Movement Delay, s/veh												
LnGrip Delay(d), s/veh	41.1		37.9				0.0	25.4	25.8	14.8		0.2
LnGrip LOS	D		D				A	C	C	B		A
Approach Vol, veh/h			1478					896			1323	
Approach Delay, s/veh			37.9					25.6			3.8	
Approach LOS			D					C			A	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s/18.2	51.7		35.2									
Change Period (Y+Rc), s	5.0		5.0									
Max Green Setting (Gmax),s/50	36.0		35.0									
Max Q Clear Time (g_c+112)s	23.2		24.3									
Green Ext Time (p_c), s	0.5		4.9									
Intersection Summary												
HCM 6th Ctrl Delay	22.7											
HCM 6th LOS	C											
Notes												
User approved volume balancing among the lanes for turning movement.												

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↗	↖	↗	↖	↗	↖	↗
Traffic Volume (vph)	13	66	103	12	329	10	470	403
Future Volume (vph)	13	66	103	12	329	10	470	403
Turn Type	Perm	NA	Perm	NA	pm+ov	pm+pt	NA	pm+pt
Protected Phases	4	4	8	8	2	2	1	6
Permitted Phases	4	4	8	8	2	2	6	6
Detector Phase	4	4	8	8	1	5	2	1
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	21.0	21.0	21.0	21.0	10.0	10.0	21.0	21.0
Minimum Split (s)	43.0	43.0	43.0	43.0	20.0	20.0	37.0	37.0
Total Split (s)	43.0%	43.0%	43.0%	43.0%	20.0%	20.0%	37.0%	37.0%
Total Split (%)	43.0%	43.0%	43.0%	43.0%	20.0%	20.0%	37.0%	37.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead Lag Lead Lag Lead Lag Lead Lag							
Lead-Lag Optimize?								
Recall Mode	Min	Min	Min	Min	Min	Min	Max	Max
Act Effcd Green (s)	11.6	11.6	11.6	11.6	37.7	32.1	52.1	41.4
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.43	0.51	0.44	0.71
v/c Ratio	0.06	0.33	0.55	0.04	0.47	0.02	0.41	0.67
Control Delay	26.2	24.8	39.3	25.8	11.0	5.6	15.2	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.2	24.8	39.3	25.8	11.0	5.6	15.2	10.9
LOS	C	C	D	C	B	A	B	A
Approach Delay	25.0							
Approach LOS	C							
Intersection Summary								
Cycle Length: 100								
Actuated Cycle Length: 73.7								
Natural Cycle: 60								
Control Type: Semi Act-Uncoordinated								
Maximum v/c Ratio: 0.67								
Intersection Signal Delay: 13.8								
Intersection Capacity Utilization 63.6%								
Analysis Period (min) 15								
Splits and Phases: 4: Jefferson St. & McLeod Rd.								

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	13	66	25	103	12	329	10	470	107	403	629	8
Traffic Volume (veh/h)	13	66	25	103	12	329	10	470	107	403	629	8
Future Volume (veh/h)	13	66	25	103	12	329	10	470	107	403	629	8
Initial Q (Obs.) 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	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	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	14	71	27	111	13	354	11	505	115	433	676	9
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3	3	3
Cap. veh/h	316	290	110	326	420	608	509	1192	270	610	1827	24
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	1007	1281	487	1287	1856	1572	1767	2855	647	1767	3562	47
Grp Volume(v), veh/h	14	0	98	111	13	354	11	311	309	433	334	351
Grp Sat Flow(s), veh/h	1007	0	1768	1287	1856	1572	1767	1763	1739	1767	1763	1847
Q Serve(g, s)	0.8	0.0	3.5	5.9	0.4	13.7	0.2	9.6	9.7	9.8	8.7	8.7
Cycle Q Clear(g, c)	1.3	0.0	3.5	9.4	0.4	13.7	0.2	9.6	9.7	9.8	8.7	8.7
Prop in Lane	1.00	0.28	1.00	1.00	1.00	1.00	1.00	0.37	1.00	0.37	1.00	0.03
Lane Grp Cap(c), veh/h	316	0	400	326	420	608	509	736	726	610	904	948
VC Ratio(X)	0.04	0.00	0.25	0.34	0.03	0.58	0.02	0.42	0.43	0.71	0.37	0.37
Avail Cap(c, a), veh/h	588	0	876	673	920	1032	739	736	726	672	904	948
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	0.0	24.3	28.2	23.1	18.6	10.3	15.8	15.8	9.9	11.2	11.2
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.6	0.0	0.9	0.0	1.8	1.8	3.1	1.2	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(95%), veh/h	0.4	0.0	2.6	3.3	0.3	8.4	0.2	7.1	7.1	6.5	6.1	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.7	0.0	24.6	28.8	23.1	19.5	10.4	17.6	17.7	13.0	12.4	12.3
LnGrp LOS	C	A	C	C	C	B	B	B	B	B	B	B
Approach Vol, veh/h	112	112	478	631	1118	1118	1118	1118	1118	1118	1118	1118
Approach Delay, s/veh	24.5	24.5	21.7	17.5	17.5	12.6	12.6	12.6	12.6	12.6	12.6	12.6
Approach LOS	C	C	C	C	C	B	B	B	B	B	B	B
Timer - Assigned Phs	1	2	4	5	6	8	8	8	8	8	8	8
Phs Duration (G+Y+Rc), s/veh	17.3	37.0	22.3	10.0	44.3	22.3	22.3	22.3	22.3	22.3	22.3	22.3
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	32.0	32.0	38.0	15.0	32.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0
Max O Clear Time (g_c+111) s	11.7	11.7	5.5	2.2	10.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7
Green Ext Time (p_c), s	0.5	3.8	0.6	0.0	4.3	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Intersection Summary												
HCM 6th Ctrl Delay	16.4											
HCM 6th LOS	B											

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑↑	↑↑	
Traffic Vol, veh/h	4	13	10	824	1032	28
Future Vol, veh/h	4	13	10	824	1032	28
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	83	83	83	83	83	83
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	5	16	12	993	1243	34

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1781	639	1277	0	-	0
Stage 1	1260	-	-	-	-	-
Stage 2	521	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	146	*655	854	-	-	-
Stage 1	531	-	-	-	-	-
Stage 2	558	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	142	*655	854	-	-	-
Mov Cap-2 Maneuver	142	-	-	-	-	-
Stage 1	515	-	-	-	-	-
Stage 2	558	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.8	0.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	854	-	354	-	-
HCM Lane V/C Ratio	0.014	-	0.058	-	-
HCM Control Delay (s)	9.3	0.1	15.8	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

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

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	
Traffic Vol, veh/h	0	0	0	15	1	37	1	842	14	34	1116	1
Future Vol, veh/h	0	0	0	15	1	37	1	842	14	34	1116	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	35	-	-	-	-	-	-	-	-	-	-	75
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	16	1	39	1	896	15	36	1187	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1710	2172	594	1572	2166	456	1188	0	0	911	0	0
Stage 1	1259	1259	-	906	906	-	-	-	-	-	-	-
Stage 2	451	913	-	666	1260	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	166	*63	*625	*246	*64	549	*935	-	-	737	-	-
Stage 1	*590	*517	-	*295	*351	-	-	-	-	-	-	-
Stage 2	*555	*348	-	*590	*517	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	-	-	-	-	-	-
Mov Cap-1 Maneuver	135	*53	*625	*219	*54	549	*935	-	-	737	-	-
Mov Cap-2 Maneuver	135	*53	-	*219	*54	-	-	-	-	-	-	-
Stage 1	*589	*443	-	*294	*350	-	-	-	-	-	-	-
Stage 2	*513	*347	-	*505	*443	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	17.5	0	1
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	* 935	-	-	-	-	343	737	-	-
HCM Lane V/C Ratio	0.001	-	-	-	-	0.164	0.049	-	-
HCM Control Delay (s)	8.9	0	-	0	0	17.5	10.1	0.7	-
HCM Lane LOS	A	A	-	A	A	C	B	A	-
HCM 95th %tile Q(veh)	0	-	-	-	-	0.6	0.2	-	-

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

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑↑	↑↑	
Traffic Vol, veh/h	1	1	1	828	1060	1
Future Vol, veh/h	1	1	1	828	1060	1
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	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1	1	1	881	1128	1

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1572	565	1129	0	-	0
Stage 1	1129	-	-	-	-	-
Stage 2	443	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	*274	*625	*935	-	-	-
Stage 1	*591	-	-	-	-	-
Stage 2	*611	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	*273	*625	*935	-	-	-
Mov Cap-2 Maneuver	*273	-	-	-	-	-
Stage 1	*590	-	-	-	-	-
Stage 2	*611	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	* 935	-	380	-	-
HCM Lane V/C Ratio	0.001	-	0.006	-	-
HCM Control Delay (s)	8.9	0	14.5	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

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

Timings **1: Jefferson St. & Singer Blvd.**

Terry O. Brown, PE
 12/19/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	←	↑	→	←	↑	→	←	↑	→	↑
Traffic Volume (vph)	223	37	466	286	45	194	283	158	15	641
Future Volume (vph)	223	37	466	286	45	194	283	158	15	641
Turn Type	Prot	NA	pm-ov	Prot	NA	pm-ov	pm-ov	pm-ov	pm-ov	NA
Protected Phases	7	4	5	3	8	5	2	2	6	6
Permitted Phases	7	4	5	3	8	5	2	2	6	6
Detector Phase	7	4	5	3	8	5	2	2	6	6
Switch Phase	7	4	5	3	8	5	2	2	6	6
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0
Total Split (s)	25.0	30.0	35.0	21.0	26.0	35.0	50.0	50.0	17.0	32.0
Total Split (%)	21.2%	25.4%	29.7%	17.8%	22.0%	29.7%	42.4%	42.4%	14.4%	27.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	17.6	10.9	39.6	13.7	7.0	58.7	47.8	47.8	35.9	30.0
Actuated Cycle Length (s)	0.18	0.11	0.40	0.14	0.07	0.60	0.49	0.49	0.36	0.30
Actuated Cycle Ratio	0.77	0.20	0.75	0.67	0.35	0.41	0.18	0.20	0.04	0.79
Control Delay	56.2	43.7	28.9	48.4	28.6	14.4	15.1	3.0	13.0	39.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	56.2	43.7	28.9	48.4	28.6	14.4	15.1	3.0	13.0	39.4
LOS	E	D	C	D	C	B	B	A	B	D
Approach Delay	38.0									
Approach LOS	D									

Intersection Summary	
Cycle Length: 118	
Actuated Cycle Length: 98.4	
Natural Cycle: 80	
Control Type: Semi-Act-Uncoord	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 32.6	
Intersection Capacity Utilization 71.8%	
Analysis Period (min) 15	
Intersection LOS: C	
ICU Level of Service C	



2019 PM Peak BUILD Conditions - Existing Geometry
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HCM 6th Signalized Intersection Summary **1: Jefferson St. & Singer Blvd.**

Terry O. Brown, PE
 12/19/2018

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SSR
Lane Configurations	←	↑	→	←	↑	→	←	↑	→	↑	↓
Traffic Volume (veh/h)	223	37	466	286	45	194	283	158	15	641	134
Future Volume (veh/h)	223	37	466	286	45	194	283	158	15	641	134
Initial Q (Obs) veh	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pct)	1.00	1.00	1.00	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
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Four Rate, veh/h	240	40	501	318	48	49	209	304	0	16	889
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3	3
Cap. veh/h	272	433	513	389	340	303	348	1480	539	1085	226
Arrive On Green	0.15	0.23	0.23	0.11	0.19	0.19	0.09	0.42	0.00	0.05	0.37
Sat Flow, veh/h	1767	1856	1572	3428	1763	1572	1767	3526	1572	1767	2903
Grp Volume(v), veh/h	240	40	501	318	48	49	209	304	0	16	418
Grp Sat Flow(s), veh/h	1767	1856	1572	1714	1763	1572	1767	1763	1572	1767	1746
Q Serve(g, s)	14.2	1.8	25.0	9.7	2.4	2.8	7.4	5.9	0.0	0.6	20.9
Cycle Q Clear(g, s)	14.2	1.8	25.0	9.7	2.4	2.8	7.4	5.9	0.0	0.6	20.9
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(g), veh/h	272	433	513	389	340	303	348	1480	539	859	852
V/C Ratio(X)	0.88	0.09	0.98	0.82	0.14	0.16	0.60	0.21	0.03	0.63	0.64
Avail Cap(g, a), veh/h	330	433	513	512	345	308	679	1480	655	859	852
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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.4	32.2	35.7	46.4	35.9	36.0	19.7	19.7	0.0	18.2	27.6
Incr Delay (d2), s/veh	20.5	0.1	33.6	7.7	0.2	0.2	1.7	0.3	0.0	0.0	4.6
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
% BackOf(95%), veh/h	12.3	1.5	24.3	8.0	1.9	2.0	5.6	4.4	0.0	0.4	14.5
Unsig. Movement Delay, s/veh	64.9	32.3	69.3	54.1	36.1	36.3	21.4	20.0	0.0	18.2	32.2
LnGrp Delay(d), s/veh	E	C	E	D	D	D	C	C	A	B	C
LnGrp LOS	E	C	E	D	D	D	C	C	A	B	C
Approach Vol, veh/h	781				415		513		849		
Approach Delay, s/veh	66.1				49.9		20.6		32.0		
Approach LOS	E				D		C		C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8			
Phs Duration (G+Y+Rc), s	10.0	50.0	17.2	30.0	15.0	45.0	21.5	25.7			
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0			
Max Green Setting (Gmax), s	12.0	45.0	16.0	25.0	30.0	27.0	20.0	21.0			
Max Q Clear Time (g, c+1), s	2.6	7.9	11.7	27.0	9.4	22.9	16.2	4.8			
Green Ext Time (p, c), s	0.0	2.1	0.5	0.0	0.6	2.0	0.2	0.4			
Intersection Summary											
HCM 6th Ctrl Delay	43.0										
HCM 6th LOS	D										
Notes											
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.											

2019 PM Peak BUILD Conditions - Existing Geometry
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Timings 2: Jefferson St. & I-25 W. Ramp Terry O. Brown, PE 12/19/2018

Lane Group	WBL	WBT	WBR	NBL	NBT	SBL	SBR
Lane Configurations	4	4	4	4	4	4	4
Traffic Volume (vph)	375	493	47	419	590	1253	618
Future Volume (vph)	375	493	47	419	590	1253	618
Turn Type	Perm	NA	Perm	pm-pt	NA	NA	Perm
Protected Phases	8	8	8	2	2	6	6
Permitted Phases	8	8	8	2	2	6	6
Detector Phase	8	8	8	2	2	6	6
Switch Phase	8	8	8	2	2	6	6
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	10.0	21.0	21.0	21.0
Total Split (s)	30.0	30.0	30.0	31.0	75.0	44.0	44.0
Total Split (%)	28.6%	28.6%	28.6%	29.5%	71.4%	41.9%	41.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag				Lead	Lag	Lag	Lag
Recall Mode	Min	Min	Min	Min	C-Max	C-Max	C-Max
Act Effct Green (s)	23.9	23.9	23.9	71.1	71.1	41.9	41.9
Actuated g/C Ratio	0.23	0.23	0.23	0.68	0.68	0.40	0.40
v/c Ratio	0.82	0.82	0.12	0.93	0.26	0.94	0.95
Control Delay	57.2	48.1	4.2	51.8	8.4	45.9	51.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.2	48.1	4.2	51.8	8.4	45.9	51.9
LOS	E	D	A	D	A	D	D
Approach Delay	48.6				26.4	47.9	
Approach LOS	D				C	D	
Intersection Summary							
Cycle Length: 105							
Actuated Cycle Length: 105							
Offset: 0.7 (1%), Referenced to phase 2:NBLT and 6:SBT, Start of Green							
Natural Cycle: 60							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 0.95							
Intersection Signal Delay: 42.4							
Intersection Capacity Utilization 90.3%							
Analysis Period (min) 15							
Splits and Phases: 2: Jefferson St. & I-25 W. Ramp							
OS (R)	25 s						
OS (L)	30 s						
OS (T)	30 s						

2019 PM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report

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HCM 6th Signalized Intersection Summary 2: Jefferson St. & I-25 W. Ramp Terry O. Brown, PE 12/19/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				4	4	4	4	4	4	4	4	4
Traffic Volume (veh/h)	0	0	0	375	493	47	419	590	0	0	1253	618
Future Volume (veh/h)	0	0	0	375	493	47	419	590	0	0	1253	618
Initial Q (Ob.) veh				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	1.00
Parking Bus Adj				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	No	No	No	No	No
Adj Sat Flow, veh/hln				1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				305	645	49	441	621	0	0	1319	651
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh. %				3	3	3	3	3	0	0	3	3
Cap. veh/h				372	781	331	463	2448	0	0	1536	885
Arrive On Green				0.21	0.21	0.21	0.42	1.00	0.00	0.00	0.44	0.44
Sat Flow, veh/h				1767	3711	1572	1767	3618	0	0	3618	1572
Grp Volume(v), veh/h				305	645	49	441	621	0	0	1319	651
Grp Sat Flow(s), veh/hln				1767	1856	1572	1767	1763	0	0	1763	1572
Q Serve(g.s), s				17.3	17.4	2.7	19.5	0.0	0.0	0.0	35.4	41.9
Cycle Q Clear(g.c), s				17.3	17.4	2.7	19.5	0.0	0.0	0.0	35.4	41.9
Prop In Lane				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Lane Grp Cap(c), veh/h				372	781	331	463	2448	0	0	1536	885
V/C Ratio(X)				0.82	0.83	0.15	0.95	0.25	0.00	0.00	0.86	0.95
Avail Cap(c.a), veh/h				421	884	374	528	2448	0	0	1536	885
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.59	0.59	0.00	0.00	0.57	0.57
Uniform Delay (d), s/veh				39.6	39.6	33.8	20.1	0.0	0.0	0.0	26.7	28.5
Incr Delay (d2), s/veh				11.1	5.9	0.2	18.2	0.1	0.0	0.0	3.8	16.5
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOf(85%),veh/hln				13.4	13.3	1.9	13.6	0.1	0.0	0.0	19.9	23.5
Unsig. Movement Delay, s/veh				50.6	45.5	34.0	38.4	0.1	0.0	0.0	30.5	45.0
LnGrp Delay(d), s/veh				50.6	45.5	34.0	38.4	0.1	0.0	0.0	30.5	45.0
LnGrp LOS				D	D	C	D	D	A	A	C	D
Approach Vol, veh/h				999	999	999	1062	1970			35.3	
Approach Delay, s/veh				46.5	46.5	46.5	16.0	16.0	B	B	D	
Approach LOS				D	D	D	B	B			D	
Timer - Assigned Phs												
Phs Duration (G+Y+Rc), s	2	2	2	5	5	6	8	8				
Change Period (Y+Rc), s	77.9	77.9	77.9	27.2	50.7	50.7	27.1	27.1				
Max Green Setting (Gmax), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max O Clear Time (g_c+1), s	70.0	70.0	70.0	26.0	39.0	39.0	25.0	25.0				
Green Ext Time (g_e), s	2.0	2.0	2.0	21.5	43.9	43.9	19.4	19.4				
Green Ext Time (g_e), s	5.0	5.0	5.0	0.7	0.0	0.0	2.6	2.6				
Intersection Summary												
HCM 6th Ctrl Delay				33.0								
HCM 6th LOS				C								
Notes												
User approved volume balancing among the lanes for turning movement.												

2019 PM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report

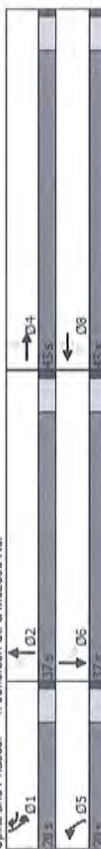
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Timings 4: Jefferson St. & McLeod Rd.

Terry O. Brown, PE
12/19/2018

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	16	66	103	12	402	10	536	473
Traffic Volume (vph)	16	66	103	12	402	10	536	473
Future Volume (vph)	16	66	103	12	402	10	536	473
Turn Type	Perm	NA	Perm	NA	pm+ov	pm+pt	NA	pm+pt
Protected Phases	4	8	8	1	5	2	1	6
Permitted Phases	4	8	8	8	2	6	6	6
Detector Phase	4	4	8	8	1	5	2	1
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Minimum Split (s)	43.0	43.0	43.0	43.0	20.0	37.0	20.0	37.0
Total Split (s)	43.0%	43.0%	43.0%	43.0%	20.0%	37.0%	20.0%	37.0%
Total Split (%)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Yellow Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Total Lost Time (s)	Min	Min	Min	Min	Min	Min	Min	Min
Lead/Lag	Min	Min	Min	Min	Min	Min	Min	Min
Lead-Lag Optimized?	11.6	11.6	11.6	31.6	37.7	32.1	52.1	41.4
Recall Mode	0.16	0.16	0.16	0.43	0.51	0.44	0.71	0.56
Act Effct Green (s)	0.08	0.33	0.55	0.04	0.59	0.03	0.46	0.38
Actuated g/C Ratio	26.4	24.8	39.3	25.8	15.8	5.6	15.9	21.4
v/c Ratio	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay	26.4	24.8	39.3	25.8	15.8	5.6	15.9	21.4
Queue Delay	C	C	D	C	B	A	B	C
Total Delay	25.0	25.0	20.7	C	B	15.8	14.7	B
Approach Delay	Intersection LOS: B							
Approach LOS	ICU Level of Service C							

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 73.7	
Natural Cycle: 60	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 16.7	
Intersection Capacity Utilization 69.3%	
Analysis Period (min) 15	



2019 PM Peak BUILD Conditions - Existing Geometry
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HCM 6th Signalized Intersection Summary 4: Jefferson St. & McLeod Rd.

Terry O. Brown, PE
12/19/2018

Movement	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	16	66	25	103	12	402	10	536
Traffic Volume (veh/h)	16	66	25	103	12	402	10	536
Future Volume (veh/h)	16	66	25	103	12	402	10	536
Initial Q (Ob), veh	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
Work Zone On Approach	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	17	71	27	111	13	432	11	576
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3
Cap, veh/h	324	333	126	364	482	690	451	1120
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	937	1281	487	1267	1856	1572	1767	2530
Grp Volume(v), veh/h	17	0	98	111	13	432	11	346
Grp Sat Flow(s), veh/h	937	0	1768	1287	1856	1572	1767	1763
Q Serve(g, s), s	1.2	0.0	3.6	6.2	0.4	17.8	0.3	12.6
Cycle Q Clear(g, c), s	1.5	0.0	3.6	9.8	0.4	17.8	0.3	12.6
Prop In Lane	1.00	0.00	0.28	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	324	0	459	364	482	690	451	674
V/C Ratio(X)	0.05	0.00	0.21	0.30	0.03	0.63	0.02	0.51
Avail Cap(c, a), veh/h	506	0	802	614	842	995	662	674
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	0.0	24.3	28.2	23.1	18.2	13.1	19.9
Incr Delay (d2), s/veh	0.1	0.0	0.2	0.5	0.0	0.9	0.0	2.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/h	0.5	0.0	2.7	3.4	0.3	10.3	0.2	9.3
Unsig. Movement Delay, s/veh	23.8	0.0	24.5	28.6	23.1	19.1	13.2	22.7
LnGrp Delay(d), s/veh	C	A	C	C	B	C	C	C
LnGrp LOS	C	A	C	C	B	C	C	C
Approach Vol, veh/h	115	556	21.1	556	702	1265	20.4	C
Approach Delay, s/veh	24.4	C	C	C	C	C	C	C
Approach LOS	C	C	C	C	C	C	C	C
Timer - Assigned Phs	1	2	4	5	6	8		
Phs Duration (G+Y+Rc), s	20.0	37.0	26.7	10.0	47.0	26.7		
Charge Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0		
Max Green Setting (Gmax), s	15.0	32.0	38.0	15.0	32.0	38.0		
Max Q Clear Time (g_c+H), s	16.1	14.7	5.6	2.3	13.1	19.8		
Green Ext Time (g_e), s	0.0	4.1	0.6	0.0	4.6	1.9		
Intersection Summary								
HCM 6th Ctrl Delay	21.3	C						
HCM 6th LOS	C							

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Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑↑	↑↑	
Traffic Vol, veh/h	5	13	10	966	1169	29
Future Vol, veh/h	5	13	10	966	1169	29
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	83	83	83	83	83	83
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	6	16	12	1164	1408	35




Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	2032	722	1443	0	-	0
Stage 1	1426	-	-	-	-	-
Stage 2	606	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	91	*596	765	-	-	-
Stage 1	475	-	-	-	-	-
Stage 2	504	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	87	*596	765	-	-	-
Mov Cap-2 Maneuver	87	-	-	-	-	-
Stage 1	454	-	-	-	-	-
Stage 2	504	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.5	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	765	-	227	-	-
HCM Lane V/C Ratio	0.016	-	0.096	-	-
HCM Control Delay (s)	9.8	0.2	22.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

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

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					<div>↕</div>			<div>↕↕</div>			<div>↕↕</div>	<div>↗</div>
Traffic Vol, veh/h	0	0	0	15	0	37	0	896	14	34	1127	45
Future Vol, veh/h	0	0	0	15	0	37	0	896	14	34	1127	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	-	-	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	16	0	39	0	953	15	36	1199	48
Major/Minor				Minor1		Major1		Major2				
Conflicting Flow All				1633	2232	484	1199	0	0	968	0	0
Stage 1				961	961	-	-	-	-	-	-	-
Stage 2				672	1271	-	-	-	-	-	-	-
Critical Hdwy				6.86	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1				5.86	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.86	5.56	-	-	-	-	-	-	-
Follow-up Hdwy				3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver				91	42	526	572	-	-	701	-	0
Stage 1				329	331	-	-	-	-	-	-	0
Stage 2				466	235	-	-	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver				77	0	526	572	-	-	701	-	-
Mov Cap-2 Maneuver				77	0	-	-	-	-	-	-	-
Stage 1				329	0	-	-	-	-	-	-	-
Stage 2				394	0	-	-	-	-	-	-	-
Approach				WB		NB		SB				
HCM Control Delay, s				30.4		0		1.1				
HCM LOS				D								
Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT						
Capacity (veh/h)	572	-	-	196	701	-						
HCM Lane V/C Ratio	-	-	-	0.282	0.052	-						
HCM Control Delay (s)	0	-	-	30.4	10.4	0.8						
HCM Lane LOS	A	-	-	D	B	A						
HCM 95th %tile Q(veh)	0	-	-	1.1	0.2	-						

Intersection						
Int Delay, s/veh	8.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	138	144	828	1060	11
Future Vol, veh/h	54	138	144	828	1060	11
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	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	57	147	153	881	1128	12
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1881	570	1140	0	-	0
Stage 1	1134	-	-	-	-	-
Stage 2	747	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	*124	*625	*935	-	-	-
Stage 1	*591	-	-	-	-	-
Stage 2	*426	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	*84	*625	*935	-	-	-
Mov Cap-2 Maneuver	*84	-	-	-	-	-
Stage 1	*402	-	-	-	-	-
Stage 2	*426	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	87.1	2.4		0		
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	* 935	-	222	-	-	
HCM Lane V/C Ratio	0.164	-	0.92	-	-	
HCM Control Delay (s)	9.6	1.1	87.1	-	-	
HCM Lane LOS	A	A	F	-	-	
HCM 95th %tile Q(veh)	0.6	-	7.7	-	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Timings 1: Jefferson St. & Singer Blvd.

Terry O. Brown, PE
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Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	←	↑	→	←	↑	←	↑	→	←	↑
Traffic Volume (vph)	131	31	195	79	21	410	564	320	21	279
Future Volume (vph)	131	31	195	79	21	410	564	320	21	279
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	2	6	1
Permitted Phases	7	4	5	3	8	5	2	2	6	1
Detector Phase	7	4	5	3	8	5	2	2	6	1
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	10.0	21.0	10.0	10.0	21.0	10.0	21.0	10.0	10.0	21.0
Minimum Split (s)	25.0	30.0	35.0	21.0	26.0	35.0	50.0	50.0	17.0	32.0
Total Split (%)	21.2%	25.4%	29.7%	17.8%	22.0%	29.7%	42.4%	42.4%	14.4%	27.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min	Max	Min	Max
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Max	Min	Max
Act Effl Green (s)	13.7	12.0	41.5	8.1	6.4	59.2	48.0	48.0	35.9	29.7
Actuated g/C Ratio	0.15	0.13	0.44	0.09	0.07	0.63	0.51	0.51	0.38	0.31
v/c Ratio	0.61	0.16	0.28	0.32	0.21	0.75	0.38	0.39	0.07	0.48
Control Delay	49.2	39.1	2.9	45.2	28.4	18.9	15.4	2.8	12.3	24.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.2	39.1	2.9	45.2	28.4	18.9	15.4	2.8	12.3	24.4
LOS	D	D	A	D	C	B	B	A	B	C
Approach Delay	23.0				39.3			13.4		23.9
Approach LOS	C				D			B		C
Intersection Summary										
Cycle Length: 118										
Actuated Cycle Length: 94.4										
Natural Cycle: 80										
Control Type: Semi Act-Uncoord										
Maximum v/c Ratio: 0.75										
Intersection Signal Delay: 18.6										
Intersection Capacity Utilization 62.3%										
Analysis Period (min) 15										
Splits and Phases: 1: Jefferson St. & Singer Blvd.										

2029 AM Peak NOBUILD Conditions - Existing Geometry
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1: Jefferson St. & Singer Blvd.

Terry O. Brown, PE
12/18/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	131	31	195	79	21	22	410	564	320	21	279	171
Future Volume (veh/h)	131	31	195	79	21	22	410	564	320	21	279	171
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	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	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	156	37	232	94	25	26	488	671	0	25	332	204
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	198	271	535	195	160	143	646	1807	468	793	477	378
Arrive On Green	0.11	0.15	0.15	0.06	0.09	0.09	0.19	0.51	0.00	0.06	0.38	0.48
Sat Flow, veh/h	1767	1856	1572	3428	1763	1572	1767	3526	1572	1767	2116	1273
Grp Volume(V), veh/h	156	37	232	94	25	26	488	671	0	25	275	261
Grp Sat Flow(s), veh/h	1767	1856	1572	1714	1763	1572	1767	1763	1572	1767	1763	1626
Q Serve(g, s), s	7.5	1.5	10.0	2.3	1.1	1.3	13.7	10.1	0.0	0.7	10.2	10.5
Cycle Q Clear(g, c), s	7.5	1.5	10.0	2.3	1.1	1.3	13.7	10.1	0.0	0.7	10.2	10.5
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.78
Lane Grp Cap(c), veh/h	198	271	535	195	160	143	646	1807	468	561	610	610
V/C Ratio(X)	0.79	0.14	0.43	0.48	0.16	0.18	0.76	0.37	0.05	0.42	0.43	0.43
Avail Cap(c), veh/h	403	528	754	625	422	376	906	1807	609	661	610	610
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(f)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	32.7	22.4	40.1	36.8	36.9	12.1	12.9	0.0	14.4	20.3	20.4
Incr Delay (d2), s/veh	6.8	0.2	0.6	1.8	0.4	0.6	2.3	0.6	0.0	0.0	1.9	2.2
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(95%), veh/h	6.5	1.2	6.6	1.8	0.9	1.0	8.9	7.0	0.0	0.5	7.8	7.6
Unsig. Movement Delay, s/veh	44.8	32.9	23.0	42.0	37.3	37.5	14.5	13.5	0.0	14.4	22.3	22.6
LnGrp Delay(d),s/veh	D	C	C	D	D	D	B	B	B	C	C	C
LnGrp LOS	D	C	C	D	D	D	B	B	B	C	C	C
Approach Vol, veh/h	425			145			1159		A	561		
Approach Delay, s/veh	31.9			40.4			13.9		22.1			
Approach LOS	C			D			B		C			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc),s	10.0	50.0	10.0	17.8	22.1	37.9	14.8	13.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax),s	20	45.0	16.0	25.0	30.0	27.0	20.0	21.0				
Max O Clear Time (g_c+1)2s	12.1	4.3	12.0	15.7	12.5	9.5	3.3					
Green Ext Time (p_c), s	0.0	5.2	0.2	0.8	1.4	2.9	0.3	0.2				
Intersection Summary												
HCM 6th Ctrl Delay			20.9									
HCM 6th LOS			C									
Notes												
Unsignalized Delay for INBRI is excluded from calculations of the approach delay and intersection delay.												

2029 AM Peak NOBUILD Conditions - Existing Geometry
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Timings 2: Jefferson St. & I-25 W. Ramp

Terry O. Brown, PE
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Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations	4A	4A	4A	4A	4A	4A	4A
Traffic Volume (vph)	272	341	148	295	1227	603	248
Future Volume (vph)	272	341	148	295	1227	603	248
Turn Type	Perm	NA	Perm	pm+pt	NA	NA	Perm
Protected Phases	8	8	8	5	2	6	6
Permitted Phases	8	8	8	2	2	6	6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	10.0	21.0	21.0	21.0
Total Split (s)	27.0	27.0	27.0	18.0	63.0	45.0	45.0
Total Split (%)	30.0%	30.0%	30.0%	20.0%	70.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag				Lead	Lead	Lag	Lag
Lead-Lag Optimize?							
Recall Mode	Min	Min	Min	Min	Min	C-Max	C-Max
Act Effrd Green (s)	19.8	19.8	19.8	60.2	60.2	43.3	43.3
Actuated g/C Ratio	0.22	0.22	0.22	0.67	0.67	0.48	0.48
v/c Ratio	0.68	0.68	0.43	0.70	0.63	0.43	0.36
Control Delay	42.4	37.1	18.9	19.7	10.8	17.0	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Total Delay	42.4	37.1	18.9	19.7	10.9	17.0	8.8
LOS	D	D	B	B	B	B	A
Approach Delay							
Approach LOS	C	C	C	B	B	B	B
Intersection Summary							
Cycle Length: 90							
Actuated Cycle Length: 90							
Offset: 0.9 (1%), Referenced to phase 2:NBT and 6:SBT, Start of Green							
Natural Cycle: 60							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 0.70							
Intersection Signal Delay: 18.6							
Intersection Capacity Utilization 58.9%							
Analysis Period (min) 15							
Splits and Phases: 2: Jefferson St. & I-25 W. Ramp							
102 (R)							
05							
06 (R)							
03							

2029 AM Peak NOBUILD Conditions - Existing Geometry
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HCM 6th Signalized Intersection Summary 2: Jefferson St. & I-25 W. Ramp

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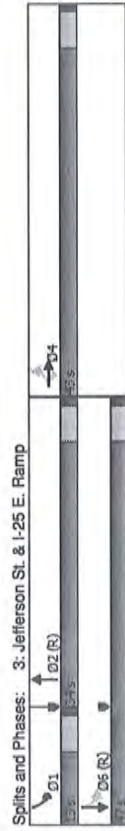
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Configurations											
Traffic Volume (veh/h)	0	0	0	272	341	148	295	1227	0	0	603
Future Volume (veh/h)	0	0	0	272	341	148	295	1227	0	0	603
Initial Q (Qb) veh				0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach				No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h				1856	1856	1856	1856	1856	0	0	1856
Adj Flow Rate, veh/h				246	325	178	355	1478	0	0	727
Peak Hour Factor				0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh. %				3	3	3	3	3	0	0	3
Cap. veh/h				336	706	299	512	2463	0	0	1837
Arrive On Green				0.19	0.19	0.19	0.24	1.00	0.00	0.00	0.52
Sat Flow, veh/h				1767	3711	1572	1767	3618	0	0	3618
Grip Sat Flow(s), veh/h				246	525	178	355	1478	0	0	727
Grip Sat Flow(s), veh/h				1767	1856	1572	1767	1763	0	0	1763
Q Serve(g, s), s				11.8	12.0	9.3	8.7	0.0	0.0	0.0	11.2
Cycle Q Clear(g, c), s				11.8	12.0	9.3	8.7	0.0	0.0	0.0	11.2
Prop In Lane				1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00
Lane Grip Cap(c), veh/h				336	706	299	512	2463	0	0	1837
V/C Ratio(X)				0.73	0.74	0.59	0.69	0.60	0.00	0.00	0.40
Avail Cap(c), veh/h				432	907	384	551	2463	0	0	1837
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(i)				1.00	1.00	1.00	0.64	0.64	0.00	0.92	0.92
Uniform Delay (d), s/veh				34.3	34.4	33.3	7.5	0.0	0.0	13.0	12.8
Incr Delay (d2), s/veh				4.6	2.5	1.9	2.2	0.7	0.0	0.0	0.6
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/h				9.2	9.4	6.5	4.2	0.4	0.0	0.0	7.6
Unsig. Movement Delay, s/veh											
LnGrp Delay(d), s/veh				38.8	36.8	35.2	9.7	0.7	0.0	0.0	13.6
LnGrp LOS				D	D	D	A	A	A	A	B
Approach Vol, veh/h						949		1833			1026
Approach Delay, s/veh						37.0		2.4			13.7
Approach LOS						D		A			B
Timer - Assigned Phs				2		5	6	8			
Phs Duration (G+Y+Rc), s				67.9		16.0	51.9	22.1			
Change Period (Y+Rc), s						5.0	5.0	5.0			
Max Green Setting (Gmax), s						58.0	40.0	22.0			
Max Q Clear Time (g_c+1), s						2.0	10.7	13.2			
Green Ext Time (g_c), s						18.2	0.3	6.8			
Intersection Summary											
HCM 6th Ctrl Delay						14.1					
HCM 6th LOS						B					
Notes											
User approved volume balancing among the lanes for turning movement.											

2029 AM Peak NOBUILD Conditions - Existing Geometry
Synchro 10 Report
2029ANX.syn

Timings 3. Jefferson St. & I-25 E. Ramp

Terry O. Brown, PE
12/18/2018

Lane Group	EBL	EBT	EBR	NBT	NBL	SBL	SBT
Lane Configurations	4	4	4	4	4	4	4
Traffic Volume (vph)	802	321	187	720	108	495	0
Future Volume (vph)	802	321	187	720	108	495	0
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	NA
Protected Phases	4	4	4	2	1	6	6
Permitted Phases	4	4	4	2	1	6	6
Detector Phase	4	4	4	2	1	6	6
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	21.0	21.0	21.0	21.0	10.0	21.0	21.0
Minimum Split (s)	43.0	43.0	43.0	34.0	13.0	47.0	47.0
Total Split (s)	47.8%	47.8%	47.8%	37.8%	14.4%	52.2%	52.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag Lead						
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min
Recall Mode	27.2	27.2	27.2	39.9	52.8	52.8	52.8
Act Eff Green (s)	0.30	0.30	0.30	0.44	0.59	0.59	0.59
Actuated g/C Ratio	0.59	0.59	0.37	0.74	0.50	0.29	0.29
Control Delay	30.7	28.2	5.5	25.9	27.7	8.5	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	28.2	5.5	25.9	27.7	8.5	8.5
LOS	C	C	A	C	C	C	A
Approach Delay	24.2	24.2	24.2	25.9	12.0	12.0	12.0
Approach LOS	C	C	C	C	B	B	B



2029 AM Peak NOBUILD Conditions - Existing Geometry
Synchro 10 Report
2029ANX.syn

HCM 6th Signalized Intersection Summary 3. Jefferson St. & I-25 E. Ramp

Terry O. Brown, PE
12/18/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↵↵	↵				↵↵	↵↵		↵	↵↵	
Traffic Volume (veh/h)	802	321	187	0	0	0	0	720	214	108	495	0
Future Volume (veh/h)	802	321	187	0	0	0	0	720	214	108	495	0
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
Parking Bus, Adj	1.00		1.00				1.00		1.00	1.00	1.00	1.00
Work Zone On Approach	No		No				No		No		No	
Adj Sat Flow, veh/h/m	1856	1856	1856				0	1856	1856	1856	1856	
Adj Flow Rate, veh/h	483	386	225				0	867	258	130	596	0
Peak Hour Factor	0.83	0.83	0.83				0.83	0.83	0.83	0.83	0.83	
Percent Heavy Veh. %	3	3	3				0	3	3	3	3	
Cap, veh/h	952	500	424				0	1359	404	315	2184	0
Arrive On Green	0.27	0.27	0.27				0.00	0.51	0.51	0.11	1.00	0.00
Sat Flow, veh/h	3534	1856	1572				0	2772	796	1767	3518	0
Grip Volume(v), veh/h	483	386	225				0	570	555	130	596	0
Grip Sat Flow(s), veh/h/m	1767	1856	1572				0	1763	1712	1767	1763	0
Q Serv(g_s), s	10.4	17.3	11.0				0.0	21.2	21.3	3.0	0.0	0.0
Cycle Q Clear(g_c), s	10.4	17.3	11.0				0.0	21.2	21.3	3.0	0.0	0.0
Prop In Lane	1.00		1.00				0.00		0.46	1.00	0.00	0.00
Lane Grip Cap(c), veh/h	952	500	424				0	894	868	315	2184	0
V/C Ratio(X)	0.51	0.77	0.53				0.00	0.64	0.64	0.41	0.27	0.00
Avail Cap(c), veh/h	1492	783	664				0	894	868	372	2184	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filler(f)	1.00	1.00	1.00				0.00	1.00	1.00	0.86	0.86	0.00
Uniform Delay (d), s/veh	27.8	30.3	28.0				0.0	16.2	16.2	11.6	0.0	0.0
Incr Delay (d2), s/veh	0.4	2.6	1.0				0.0	3.5	3.6	0.7	0.3	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/m	7.8	12.4	7.5				0.0	13.7	13.4	1.9	0.1	0.0
Unsig. Movement Delay, s/veh							0.0	19.6	19.8	12.3	0.3	0.0
LnGrip Delay(d), s/veh	28.2	32.9	29.1				0.0	19.6	19.8	12.3	0.3	0.0
LnGrip LOS	C	C	C				A	B	B	B	A	A
Approach Vol, veh/h	1094						1125				726	
Approach Delay, s/veh	30.1						19.7				2.4	
Approach LOS	C						B				A	
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	50.7		29.2	60.8								
Change Period (Y+Rc), s	5.0		5.0	5.0								
Max Green Setting (Gmax), s	29.0		38.0	42.0								
Max Q Clear Time (g_c+1)/5d	23.3		19.3	2.0								
Green Ext Time (p_c), s	0.1		5.0	4.7								
Intersection Summary												
HCM 6th Ctrl Delay	19.3											
HCM 6th LOS	B											
Notes												

2029 AM Peak NOBUILD Conditions - Existing Geometry
Synchro 10 Report
2029ANX.syn

Timings
4: Jefferson St. & McLeod Rd.

Terry O. Brown, PE
12/18/2018

EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
→	→	←	←	→	→	←	←
Lane Group							
Lane Configurations							
11	49	93	31	387	18	466	216
Traffic Volume (vph)							
11	49	93	31	387	18	466	216
Future Volume (vph)							
11	49	93	31	387	18	466	216
Turn Type							
Perm	NA	Perm	NA	pm+ov	pm+pt	NA	pm+pt
Protected Phases							
4	4	8	8	1	5	2	1
Permitted Phases							
4	4	8	8	1	5	2	1
Detector Phase							
4	4	8	8	1	5	2	1
Switch Phase							
5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)							
21.0	21.0	21.0	10.0	10.0	21.0	10.0	21.0
Minimum Split (s)							
43.0	43.0	43.0	43.0	20.0	20.0	37.0	20.0
Total Split (%)							
43.0%	43.0%	43.0%	43.0%	20.0%	20.0%	37.0%	20.0%
Total Split (%)							
43.0%	43.0%	43.0%	43.0%	20.0%	20.0%	37.0%	20.0%
Yellow Time (s)							
4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)							
1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)							
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)							
5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode							
Min	Min	Min	Min	Min	Min	Max	Max
11.7	11.7	11.7	28.2	38.2	32.3	47.7	37.9
Act Effcd Green (s)							
0.17	0.17	0.17	0.17	0.40	0.54	0.68	0.54
Actuated g/c Ratio							
0.06	0.27	0.54	0.13	0.71	0.04	0.39	0.28
w/c Ratio							
25.8	22.7	37.5	26.4	19.8	5.6	14.6	7.1
Control Delay							
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay							
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay							
25.8	22.7	37.5	26.4	19.8	5.6	14.6	7.1
LOS							
C	C	D	C	B	A	B	A
Approach Delay							
23.1	23.5				14.3	8.8	
Approach LOS							
C	C				B	A	
Intersection Summary							
Cycle Length: 100							
Actuated Cycle Length: 70.6							
Natural Cycle: 55							
Control Type: Semi Act-Uncoord							
Maximum w/c Ratio: 0.71							
Intersection Signal Delay: 15.4							
Intersection Capacity Utilization 54.3%							
Analysis Period (min) 15							
Intersection LOS: B							
ICU Level of Service A							
Splits and Phases: 4: Jefferson St. & McLeod Rd.							
01	02	03	04	05	06	07	08
→	→	→	→	→	→	→	→
→	→	→	→	→	→	→	→
→	→	→	→	→	→	→	→

2029 AM Peak NOBUILD Conditions - Existing Geometry
Synchro 10 Report
2029ANX.syn

HCM 6th Signalized Intersection Summary
4: Jefferson St. & McLeod Rd.

Terry O. Brown, PE
12/18/2018

EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
→	→	←	←	→	→	←	←	←
Movement								
11	49	18	93	31	387	18	466	26
Lane Configurations								
11	49	18	93	31	387	18	466	26
Traffic Volume (veh/h)								
11	49	18	93	31	387	18	466	26
Future Volume (veh/h)								
11	49	18	93	31	387	18	466	26
Initial Q (Gb), veh								
0	0	0	0	0	0	0	0	0
Pcd-Bike Adj(A_pbT)								
1.00	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
Work Zone On Approach								
No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h								
1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h								
14	61	22	116	39	484	22	582	33
Peak Hour Factor								
0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %								
3	3	3	3	3	3	3	3	3
Cap, veh/h								
344	401	145	446	572	666	504	1334	98
Arrive On Green								
0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h								
872	1302	469	1305	1856	1572	1767	3398	219
Grp Volume(v), veh/h								
14	0	83	116	39	484	22	302	312
Grp Sat Flow(s),veh/h/m								
872	0	1771	1305	1856	1572	1767	1763	1822
Q Serve(g_s), s								
0.9	0.0	2.8	5.8	1.2	20.9	0.6	10.2	7.7
Cycle Q Clear(g_c), s								
2.2	0.0	2.8	8.5	1.2	20.9	0.6	10.2	7.7
Prop In Lane								
1.00	0.27	1.00	1.00	1.00	1.00	0.10	1.00	0.12
Lane Grp Cap(c), veh/h								
344	0	546	446	572	666	504	692	715
V/C Ratio(X)								
0.04	0.00	0.15	0.26	0.07	0.73	0.04	0.44	0.53
Avail Cap(c), veh/h								
482	0	826	652	865	914	721	692	715
HCM Platoon Ratio								
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh								
20.7	0.0	20.5	23.6	19.9	19.6	12.4	18.1	12.1
Incr Delay (d2), s/veh								
0.0	0.0	0.1	0.3	0.0	1.9	0.0	2.0	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
%ile BackOfQ(95%),veh/m/0.3								
0.3	0.0	2.0	3.2	0.9	11.9	0.4	7.7	7.9
Unsig. Movement Delay, s/veh								
20.7	0.0	20.6	23.9	20.0	21.4	12.4	20.1	13.0
LnGrp Delay(d),s/veh								
20.7	0.0	20.6	23.9	20.0	21.4	12.4	20.1	13.0
LnGrp LOS								
C	A	C	B	C	B	C	B	B
Approach Vol, veh/h								
97			639		636		792	
Approach Delay, s/veh								
20.6			21.8		19.8		14.8	
Approach LOS								
C			C		B		B	
Timer - Assigned Phs								
1	2	4	5	6	8			
Phs Duration (G+Y+R), s/14.4								
37.0		30.1	10.0	41.4	30.1			
Change Period (Y+R), s								
5.0		5.0	5.0	5.0	5.0			
Max Green Setting (Gmax)/560								
32.0		38.0	15.0	32.0	38.0			
Max Q Clear Time (g_c+1)90								
12.2		4.8	2.6	9.7	22.9			
Green Ext Time (p_c), s								
0.4	3.7	0.5	0.0	3.2	2.2			
Intersection Summary								
HCM 6th Grp Delay								
18.6								
B								

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑↑	↑↑	
Traffic Vol, veh/h	1	2	6	921	650	13
Future Vol, veh/h	1	2	6	921	650	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	83	83	83	83	83	83
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1	2	7	1110	783	16

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1360	400	799	0	-	0
Stage 1	791	-	-	-	-	-
Stage 2	569	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	225	*827	1110	-	-	-
Stage 1	683	-	-	-	-	-
Stage 2	527	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	221	*827	1110	-	-	-
Mov Cap-2 Maneuver	221	-	-	-	-	-
Stage 1	673	-	-	-	-	-
Stage 2	527	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.4	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1110	-	432	-	-
HCM Lane V/C Ratio	0.007	-	0.008	-	-
HCM Control Delay (s)	8.3	0.1	13.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

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

HCM 6th TWSC
6: Jefferson St. & "A"

Terry O. Brown, PE
12/18/2018

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑			↱			↱			↰	↑
Traffic Vol, veh/h	0	0	0	18	1	42	1	934	16	37	645	1
Future Vol, veh/h	0	0	0	18	1	42	1	934	16	37	645	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	35	-	-	-	-	-	-	-	-	-	-	75
Veh in Median Storage, #	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	22	1	51	1	1125	19	45	777	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1432	2013	389	1616	2005	572	778	0	0	1144	0	0
Stage 1	867	867	-	1137	1137	-	-	-	-	-	-	-
Stage 2	565	1146	-	479	868	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	162	68	*827	*108	69	461	1136	-	-	601	-	-
Stage 1	585	552	-	*213	273	-	-	-	-	-	-	-
Stage 2	474	270	-	*780	551	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	-	-	-	-	-	-
Mov Cap-1 Maneuver	28	59	*827	*97	60	461	1136	-	-	601	-	-
Mov Cap-2 Maneuver	28	59	-	*97	60	-	-	-	-	-	-	-
Stage 1	583	479	-	*213	272	-	-	-	-	-	-	-
Stage 2	419	269	-	*677	478	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	31.5	0	1.3
HCM LOS	A	D		

Minor Lane/Major Mvmt	NBL	NBT	NBFLn	EBLn	WBLn	SBL	SBT	SBR
Capacity (veh/h)	1136	-	-	-	-	208	601	-
HCM Lane V/C Ratio	0.001	-	-	-	-	0.353	0.074	-
HCM Control Delay (s)	8.2	0	-	0	0	31.5	11.5	0.7
HCM Lane LOS	A	A	-	A	A	D	B	A
HCM 95th %tile Q(veh)	0	-	-	-	-	1.5	0.2	-

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

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑↑	↑↑	
Traffic Vol, veh/h	1	1	1	922	663	1
Future Vol, veh/h	1	1	1	922	663	1
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	83	83	83	83	83	83
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1	1	1	1111	799	1

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1358	400	800	0	-	0
Stage 1	800	-	-	-	-	-
Stage 2	558	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	225	*827	1109	-	-	-
Stage 1	674	-	-	-	-	-
Stage 2	534	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	225	*827	1109	-	-	-
Mov Cap-2 Maneuver	225	-	-	-	-	-
Stage 1	673	-	-	-	-	-
Stage 2	534	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.2	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1109	-	354	-	-
HCM Lane V/C Ratio	0.001	-	0.007	-	-
HCM Control Delay (s)	8.2	0	15.2	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

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

Timings
1: Jefferson St. & Singer Blvd.

Terry O. Brown, PE
12/18/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	131	31	195	79	21	410	574	320	21	289
Future Volume (vph)	131	31	195	79	21	410	574	320	21	289
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	2	6	1
Permitted Phases	7	4	5	3	8	5	2	2	6	1
Detector Phase	7	4	5	3	8	5	2	2	6	1
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	10.0	21.0	10.0	10.0	21.0	10.0	21.0	10.0	21.0	21.0
Minimum Split (s)	25.0	30.0	35.0	21.0	26.0	35.0	50.0	50.0	17.0	32.0
Total Split (%)	21.2%	25.4%	29.7%	17.8%	22.0%	29.7%	42.4%	42.4%	14.4%	27.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Max	Max	Min	Max
Recall Mode	Min	Min	Min	Min	Min	Min	Max	Max	Min	Max
Act Effcd Green (s)	13.7	12.0	41.8	8.1	6.4	59.3	48.1	35.6	29.5	
Actuated g/c Ratio	0.14	0.13	0.44	0.09	0.07	0.63	0.51	0.51	0.38	0.31
w/c Ratio	0.61	0.16	0.28	0.32	0.21	0.75	0.38	0.39	0.07	0.50
Control Delay	49.3	39.1	2.9	45.2	28.4	19.4	15.5	2.8	12.4	25.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.3	39.1	2.9	45.2	28.4	19.4	15.5	2.8	12.4	25.3
LOS	D	D	A	D	C	B	B	A	B	C
Approach Delay	23.0			39.3			13.6			24.7
Approach LOS	C			D			B			C
Intersection Summary										
Cycle Length: 118										
Actuated Cycle Length: 94.5										
Natural Cycle: 80										
Control Type: Semi Act-Uncoordinated										
Maximum w/c Ratio: 0.75										
Intersection Signal Delay: 18.8										
Intersection Capacity Utilization 82.6%										
Analysis Period (min) 15										
Splits and Phases: 1: Jefferson St. & Singer Blvd.										
D05	D01	D02	D03	D04	D05	D06	D07	D08	D09	D10

2029 AM Peak BUILD Conditions - Existing Geometry
Synchro 10 Report
2029ABX.syn

HCM 6th Signalized Intersection Summary
1: Jefferson St. & Singer Blvd.

Terry O. Brown, PE
12/18/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	131	31	195	79	21	22	410	574	320	21	289	171
Future Volume (veh/h)	131	31	195	79	21	22	410	574	320	21	289	171
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	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	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h/n	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	156	37	232	94	25	26	488	683	0	25	344	204
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	198	271	535	195	160	143	641	1807	465	805	468	468
Arrive On Green	0.11	0.15	0.15	0.06	0.09	0.09	0.19	0.51	0.00	0.06	0.38	0.38
Sat Flow, veh/h	1767	1856	1572	3428	1763	1572	1767	3526	1572	1767	2145	1248
Grp Volume(v), veh/h	156	37	232	94	25	26	488	683	0	25	281	267
Grp Sat Flow(s), veh/h/n	1767	1856	1572	1714	1763	1572	1767	1763	1572	1767	1763	1631
Q Served(g, s)	7.5	1.5	10.0	2.3	1.1	1.3	13.7	10.3	0.0	0.7	10.4	10.7
Cycle Q Clear(g, c), s	7.5	1.5	10.0	2.3	1.1	1.3	13.7	10.3	0.0	0.7	10.4	10.7
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grp Cap(c), veh/h	198	271	535	195	160	143	641	1807	465	661	612	612
V/C Ratio(X)	0.79	0.14	0.43	0.48	0.16	0.18	0.76	0.38	0.05	0.43	0.44	0.44
Avail Cap(c, a), veh/h	403	--528	754	625	422	376	901	1807	606	661	612	612
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.0	32.7	22.4	40.1	36.8	36.9	12.2	12.9	0.0	14.4	20.4	20.5
Incr Delay (d2), s/veh	6.8	0.2	0.6	1.8	0.4	0.6	2.5	0.6	0.0	0.0	2.0	2.3
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(95%), veh/m	6.5	1.2	6.6	1.8	0.9	1.0	8.9	7.2	0.0	0.5	8.0	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	44.8	32.9	23.0	42.0	37.3	37.5	14.7	13.5	0.0	14.4	22.4	22.8
LnGrp LOS	D	C	C	D	D	D	B	B	A	B	C	C
Approach Vol, veh/h	425	145										
Approach Delay, s/veh	31.9	40.4										
Approach LOS	C	D										
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s/10.0	50.0	10.0	17.8	22.1	37.9	14.8	13.0					
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0					
Max Green Setting (Gmax)2x0	45.0	16.0	25.0	30.0	27.0	20.0	21.0					
Max Q Clear Time (g, c+1)2x7	12.3	4.3	12.0	15.7	12.7	9.5	3.3					
Green Ext Time (p, c), s	0.0	5.3	0.2	0.8	1.4	3.0	0.3	0.2				
Intersection Summary												
HCM 6th Ctrl Delay	21.0											
HCM 6th LOS	C											
Notes												
Unsignalized Delay for INBBL is excluded from calculations of the approach delay and intersection delay.												

2029 AM Peak BUILD Conditions - Existing Geometry
Synchro 10 Report
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Timings 2: Jefferson St. & I-25 W. Ramp

Terry O. Brown, PE
12/18/2018

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations	4T	4T	4T	4T	4T	4T	4T
Traffic Volume (vph)	284	341	148	332	1237	613	248
Future Volume (vph)	284	341	148	332	1237	613	248
Turn Type	Perm	NA	Perm	pm-pt	NA	NA	Perm
Protected Phases	8	8	8	5	2	6	6
Permitted Phases	8	8	8	2	2	6	6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	10.0	21.0	21.0	21.0
Total Split (s)	27.0	27.0	27.0	18.0	63.0	45.0	45.0
Total Split (%)	30.0%	30.0%	30.0%	20.0%	70.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	Min	Min	Min	Min	Min	Min	Min
Act Eff Green (s)	19.9	19.9	19.9	60.1	60.1	42.5	42.5
Actuated g/c Ratio	0.22	0.22	0.22	0.67	0.67	0.47	0.47
v/c Ratio	0.69	0.69	0.43	0.79	0.64	0.45	0.37
Control Delay	42.7	37.3	18.8	26.4	10.9	17.6	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Total Delay	42.7	37.3	18.8	26.4	11.1	17.6	9.9
LOS	D	D	B	C	B	B	A
Approach Delay							
Approach LOS							
Intersection Summary							
Cycle Length: 90							
Actuated Cycle Length: 90							
Offset: 0.9 (1%), Referenced to phase 2:NBT and 6:SBT, Start of Green							
Natural Cycle: 60							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 0.79							
Intersection Signal Delay: 19.6							
Intersection Capacity Utilization 60.6%							
Analysis Period (min) 15							
Splits and Phases: 2: Jefferson St. & I-25 W. Ramp							
102 (R)							
05							
06 (R)							
08							

2029 AM Peak BUILD Conditions - Existing Geometry
Synchro 10 Report
2029ABX.syn

HCM 6th Signalized Intersection Summary 2: Jefferson St. & I-25 W. Ramp

Terry O. Brown, PE
12/18/2018

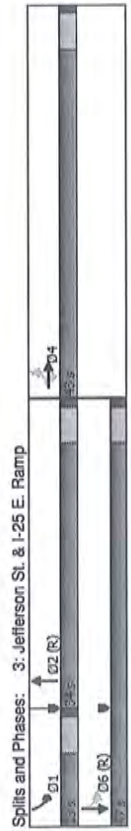
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Configurations				4T	4T	4T	4T	4T	4T	4T	4T
Traffic Volume (veh/h)	0	0	0	284	341	148	332	1237	0	0	613
Future Volume (veh/h)	0	0	0	284	341	148	332	1237	0	0	613
Initial Q (Qb) veh				0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00	1.00	1.00	1.00	1.00	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
Work Zone On Approach				No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h				1856	1856	1856	1856	1856	0	0	1856
Adj Flow Rate, veh/h				251	538	178	400	1490	0	0	739
Peak Hour Factor				0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh. %				3	3	3	3	3	0	0	3
Cap. veh/h				342	718	304	526	2452	0	0	1762
Arrive On Green				0.19	0.19	0.19	0.28	1.00	0.00	0.00	0.50
Sat Flow, veh/h				1767	3711	1572	1767	3618	0	0	3618
Grp Volume(v), veh/h				251	538	178	400	1490	0	0	739
Grp Sat Flow(s), veh/h				1767	1856	1572	1767	1763	0	0	1763
Q Serve(g/s), s				12.0	12.3	9.3	10.5	0.0	0.0	0.0	11.9
Cycle Q Clear(g_c), s				12.0	12.3	9.3	10.5	0.0	0.0	0.0	11.9
Prop In Lane				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00
Lane Grp Cap(c), veh/h				342	718	304	526	2452	0	0	1762
V/C Ratio(X)				0.73	0.75	0.59	0.76	0.61	0.00	0.00	0.42
Avail Cap(c_a), veh/h				432	907	384	533	2452	0	0	1762
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.58	0.58	0.00	0.00	0.91
Uniform Delay (d), s/veh				34.1	34.2	33.0	8.2	0.0	0.0	0.0	14.2
Incr Delay (d2), s/veh				4.8	2.7	1.8	3.7	0.7	0.0	0.0	0.7
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/h				9.4	9.6	6.5	4.9	0.4	0.0	0.0	8.1
Unsig. Movement Delay, s/veh				38.9	36.9	34.8	11.9	0.7	0.0	0.0	14.9
LnGrp Delay(d), s/veh				D	D	C	B	A	A	A	B
LnGrp LOS				D	D	C	B	A	A	A	B
Approach Vol, veh/h				967			1890				1038
Approach Delay, s/veh				37.0			3.0				15.0
Approach LOS				D			A				B
Timer - Assigned Phs				2			5				8
Phs Duration (G+Y+Rc), s				67.6			17.6				22.4
Change Period (Y+Rc), s				5.0			5.0				5.0
Max Green Setting (Gmax), s				58.0			13.0				22.0
Max Q Clear Time (g_c+1t), s				2.0			12.5				14.3
Green Ext Time (g_e), s				18.5			0.1				3.1
Intersection Summary											
HCM 6th Ctrl Delay				14.7			B				
HCM 6th LOS				B							
Notes											
User approved volume balancing among the lanes for turning movement.											

2029 AM Peak BUILD Conditions - Existing Geometry
Synchro 10 Report
2029ABX.syn

Timings 3: Jefferson St. & I-25 E. Ramp

Terry O. Brown, PE
12/18/2018

Lane Group	EBL	EBT	EBR	NBT	NBL	SBL	SBT
Lane Configurations	4	4	4	4	4	4	4
Traffic Volume (vph)	802	321	226	767	108	518	0
Future Volume (vph)	802	321	226	767	108	518	0
Turn Type	Perm	NA	Perm	NA	pm+pt	NA	NA
Protected Phases	4	4	4	2	1	6	6
Permitted Phases	4	4	4	2	1	6	6
Detector Phase	4	4	4	2	1	6	6
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	21.0	21.0	21.0	21.0	10.0	21.0	21.0
Minimum Split (s)	43.0	43.0	43.0	34.0	13.0	47.0	47.0
Total Split (s)	47.8%	47.8%	47.8%	37.8%	14.4%	52.2%	52.2%
Total Split (%)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Yellow Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min
Recall Mode	27.3	27.3	27.3	39.7	52.7	52.7	52.7
Act Effct Green (s)	0.30	0.30	0.30	0.44	0.59	0.59	0.59
Actuated g/C Ratio	0.59	0.58	0.45	0.79	0.54	0.50	0.50
v/c Ratio	30.5	28.1	9.3	27.9	32.0	8.7	8.7
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	30.5	28.1	9.3	27.9	32.0	8.7	8.7
Total Delay	C	C	A	C	C	C	A
LOS	C	C	A	C	C	C	A
Approach Delay	24.2			27.9			12.7
Approach LOS	C			C			B



2029 AM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report
2029ABX.syn

HCM 6th Signalized Intersection Summary 3: Jefferson St. & I-25 E. Ramp

Terry O. Brown, PE
12/18/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4	4	4
Traffic Volume (veh/h)	802	321	226	0	0	0	0	767	226	108	518	0
Future Volume (veh/h)	802	321	226	0	0	0	0	767	226	108	518	0
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	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	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	483	386	272	0	0	0	924	272	130	624	0	0
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	959	503	426	0	0	0	1358	399	294	2178	0	0
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	3534	1856	1572	1856	1572	1856	1856	1572	1856	1572	1856	1572
Grip Volume(v), veh/h	483	386	272	0	0	0	924	272	130	624	0	0
Grip Sat Flow(s), veh/h	1767	1856	1572	1767	1856	1572	1767	1856	1572	1767	1856	1572
Q Serve(g, s), s	10.4	17.2	13.7	0.0	0.0	0.0	23.3	23.4	3.0	0.0	0.0	0.0
Cycle Q Clear(g, c), s	10.4	17.2	13.7	0.0	0.0	0.0	23.3	23.4	3.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Grip Cap(c), veh/h	959	503	426	0	0	0	891	886	294	2178	0	0
V/C Ratio(X)	0.50	0.77	0.64	0.00	0.68	0.68	0.44	0.29	0.00	0.00	0.00	0.00
Avail Cap(c, a), veh/h	1492	763	684	0	0	0	891	886	351	2178	0	0
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(f)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.7	30.2	28.9	0.0	16.8	16.8	12.5	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	2.5	1.6	0.0	4.2	4.2	0.9	0.3	0.0	0.0	0.0	0.0
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 BackOf(95%), veh/m	7.8	12.4	9.0	0.0	14.9	14.7	1.9	0.2	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh	28.1	32.7	30.5	0.0	20.9	21.1	13.4	0.3	0.0	0.0	0.0	0.0
LnGrp Delay(d), s/veh	C	C	C	C	C	C	C	C	C	C	C	C
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h	1141			1196			754					
Approach Delay, s/veh	30.2			21.0			2.5					
Approach LOS	C			C			A					
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s	50.5	50.5	29.4	60.6								
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0								
Max Green Setting (Gmax), s	29.0	29.0	38.0	42.0								
Max Q Clear Time (g_c+1), s	25.4	25.4	19.2	2.0								
Green Ext Time (p_c), s	0.1	2.4	5.2	4.9								
Intersection Summary												
HCM 6th Ctrl Delay	19.9											
HCM 6th LOS	B											
Notes												
User approved volume balancing among the lanes for turning movement.												

2029 AM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report
2029ABX.syn

Timings
4: Jefferson St. & McLeod Rd.

Terry O. Brown, PE
12/18/2018

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	15	49	93	31	467	18	538	292
Traffic Volume (vph)	15	49	93	31	467	18	538	292
Future Volume (vph)	15	49	93	31	467	18	538	292
Turn Type	Perm	NA	Perm	NA	pm+ov	pm+pt	NA	NA
Protected Phases	4	4	8	8	1	5	2	1
Permitted Phases	4	4	8	8	1	5	2	1
Detector Phase	4	4	8	8	1	5	2	1
Switch Phase	4	4	8	8	1	5	2	1
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	10.0	21.0	10.0	21.0
Total Split (s)	43.0	43.0	43.0	43.0	20.0	37.0	20.0	37.0
Total Split (%)	43.0%	43.0%	43.0%	43.0%	20.0%	37.0%	20.0%	37.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Min	Min	Min	Min	Min	Max	Min	Max
Act Eff'd Green (s)	11.8	11.8	11.8	31.3	37.9	32.1	51.6	40.7
Actuated g/c Ratio	0.16	0.16	0.16	0.43	0.52	0.44	0.70	0.55
v/c Ratio	0.09	0.28	0.56	0.13	0.83	0.05	0.46	0.61
Control Delay	26.5	23.3	39.1	26.9	27.8	5.7	16.4	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.5	23.3	39.1	26.9	27.8	5.7	16.4	9.8
LOS	C	C	D	C	C	A	B	A
Approach Delay	23.9		29.5			16.1		9.8
Approach LOS	C		C			B		A
Intersection Summary								
Cycle Length: 100								
Actuated Cycle Length: 73.4								
Natural Cycle: 60								
Control Type: Semi Act-Uncoord								
Maximum v/c Ratio: 0.83								
Intersection Signal Delay: 17.9								
Intersection Capacity Utilization 61.3%								
Analysis Period (min) 15								
Splits and Phases: 4: Jefferson St. & McLeod Rd.								
	01	02	03	04	05	06	07	08
	01	02	03	04	05	06	07	08

2029 AM Peak BUILD Conditions - Existing Geometry
Synchro 10 Report
2029ABX.syn

HCM 6th Signalized Intersection Summary
4: Jefferson St. & McLeod Rd.

Terry O. Brown, PE
12/18/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	15	49	18	93	31	467	18	538	26	292	461	30
Traffic Volume (veh/h)	15	49	18	93	31	467	18	538	26	292	461	30
Future Volume (veh/h)	15	49	18	93	31	467	18	538	26	292	461	30
Initial Q (Ob), 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	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	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	19	61	22	116	39	584	22	672	32	365	576	38
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3	3	3
Cap. veh/h	339	447	161	483	637	775	434	1184	56	479	1480	98
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.05	0.35	0.35	0.15	0.44	0.44
Sat Flow, veh/h	795	1302	469	1305	1856	1572	1767	3426	163	1767	3357	221
Grip Sat Flow(s), veh/h	795	0	1771	1305	1856	1572	1767	1763	1826	1767	1763	1816
Q Serve(g_s), s	1.5	0.0	3.0	6.2	1.3	27.8	0.7	14.8	14.8	11.7	10.7	10.7
Cycle Q Clear(g_c), s	2.8	0.0	3.0	9.2	1.3	27.8	0.7	14.8	14.8	11.7	10.7	10.7
Prop In Lane	1.00	0.27	1.00	1.00	1.00	1.00	0.09	1.00	0.09	1.00	0.12	0.12
Lane Grp Cap(c), veh/h	339	0	608	483	637	775	434	609	631	479	777	801
V/C Ratio(X)	0.06	0.00	0.14	0.24	0.06	0.75	0.05	0.57	0.57	0.76	0.39	0.39
Avail Cap(c), veh/h	339	0	727	571	761	880	624	609	631	501	777	801
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	0.0	21.0	24.1	20.4	19.0	16.9	24.7	24.7	16.7	17.5	17.5
Incr Delay (d2), s/veh	0.1	0.0	0.1	0.3	0.0	3.3	0.0	3.8	3.7	6.5	1.5	1.4
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(95%), veh/h	0.5	0.0	2.2	3.5	1.0	15.4	0.5	10.9	11.2	9.0	8.0	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	21.4	0.0	21.1	24.4	20.5	22.2	17.0	28.5	28.4	23.2	18.9	18.9
LnGrp LOS	C	A	C	C	C	B	C	C	C	C	B	B
Approach Vol, veh/h	102					739		726		979		
Approach Delay, s/veh	21.1					22.5		28.1		20.5		
Approach LOS	C					C		C		C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s/18.8	37.0			36.8	10.0	45.8		36.8				
Change Period (Y+Rc), s	5.0			5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	32.0			38.0	15.0	32.0		38.0				
Max Q Clear Time (g_c+113g), s	16.8			5.0	2.7	12.7		29.8				
Green Ext Time (p_c), s	0.2	3.9		0.6	0.0	3.7		2.0				
Intersection Summary												
HCM 6th Ctrl Delay								23.3				
HCM 6th LOS								C				

2029 AM Peak BUILD Conditions - Existing Geometry
Synchro 10 Report
2029ABX.syn

Intersection

Int Delay, s/veh 0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations	W			↑↑	↑↑	
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Traffic Vol, veh/h	3	2	6	1076	799	15
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Future Vol, veh/h	3	2	6	1076	799	15
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Conflicting Peds, #/hr	0	0	0	0	0	0
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Sign Control	Stop	Stop	Free	Free	Free	Free
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RT Channelized	- None		- None		- None	
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Storage Length	0	-	-	-	-	-
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Veh in Median Storage	0	-	-	0	0	-
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Grade, %	0	-	-	0	0	-
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Peak Hour Factor	83	83	83	83	83	83
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Heavy Vehicles, %	3	3	3	3	3	3
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Mvmt Flow	4	2	7	1296	963	18
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Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	1634	491	981	0	-	0
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Stage 1	972	-	-	-	-	-
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Stage 2	662	-	-	-	-	-
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Critical Hdwy	6.86	6.96	4.16	-	-	-
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Critical Hdwy Stg 1	5.86	-	-	-	-	-
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Critical Hdwy Stg 2	5.86	-	-	-	-	-
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Follow-up Hdwy	3.53	3.33	2.23	-	-	-
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Pot Cap-1 Maneuver	154	*758	1020	-	-	-
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Stage 1	630	-	-	-	-	-
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Stage 2	472	-	-	-	-	-
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Platoon blocked, %	1	1	1	-	-	-
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Mov Cap-1 Maneuver	150	*758	1020	-	-	-
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Mov Cap-2 Maneuver	150	-	-	-	-	-
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Stage 1	615	-	-	-	-	-
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Stage 2	472	-	-	-	-	-
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Approach	EB	NB	SB
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HCM Control Delay	21.7	0.1	0
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HCM LOS	C		
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Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
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Capacity (veh/h)	1020	-	221	-	-
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HCM Lane V/C Ratio	0.007	-	0.027	-	-
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HCM Control Delay (s)	8.6	0.1	21.7	-	-
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HCM Lane LOS	A	A	C	-	-
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HCM 95th %tile Q(veh)	0	-	0.1	-	-
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Notes




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

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔			↔			↔	↔
Traffic Vol, veh/h	0	0	0	18	0	42	0	994	16	37	657	50
Future Vol, veh/h	0	0	0	18	0	42	0	994	16	37	657	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	-	-	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	22	0	51	0	1198	19	45	792	60

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1694	2090	609	792	0	0
Stage 1	1208	1208	-	-	-	-
Stage 2	486	882	-	-	-	-
Critical Hdwy	6.86	6.56	6.96	4.16	-	-
Critical Hdwy Stg 1	5.86	5.56	-	-	-	-
Critical Hdwy Stg 2	5.86	5.56	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	2.23	-	-
Pot Cap-1 Maneuver	83	51	436	818	-	-
Stage 1	244	252	-	-	-	-
Stage 2	581	360	-	-	-	-
Platoon blocked, %					-	-
Mov Cap-1 Maneuver	71	0	436	818	-	-
Mov Cap-2 Maneuver	71	0	-	-	-	-
Stage 1	244	0	-	-	-	-
Stage 2	498	0	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	40.3	0	1.4
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	818	-	-	172	563
HCM Lane V/C Ratio	-	-	-	0.42	0.079
HCM Control Delay (s)	0	-	-	40.3	11.9
HCM Lane LOS	A	-	-	E	B
HCM 95th %tile Q(veh)	0	-	-	1.9	0.3

Intersection						
Int Delay, s/veh	33.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	60	153	160	922	663	12
Future Vol, veh/h	60	153	160	922	663	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	83	83	83	83	83	83
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	72	184	193	1111	799	14
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1748	407	813	0	-	0
Stage 1	806	-	-	-	-	-
Stage 2	942	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	105	*827	1093	-	-	-
Stage 1	668	-	-	-	-	-
Stage 2	337	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	~ 57	*827	1093	-	-	-
Mov Cap-2 Maneuver	~ 57	-	-	-	-	-
Stage 1	360	-	-	-	-	-
Stage 2	337	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	298.8	2.6		0		
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1093	-	172	-	-	
HCM Lane V/C Ratio	0.176	-	1.492	-	-	
HCM Control Delay (s)	9	1.5	298.8	-	-	
HCM Lane LOS	A	A	F	-	-	
HCM 95th %tile Q(veh)	0.6	-	16.4	-	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Timings
1: Jefferson St. & Singer Blvd.

Terry O. Brown, PE
12/18/2018

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations	1	1	1	1	1	1	1	1	1	1
Traffic Volume (vph)	234	39	490	311	47	204	288	166	16	664
Future Volume (vph)	234	39	490	311	47	204	288	166	16	664
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	7	4	5	3	8	5	2	2	6	1
Permitted Phases	7	4	5	3	8	5	2	2	6	1
Detector Phase	7	4	5	3	8	5	2	2	6	1
Switch Phase	7	4	5	3	8	5	2	2	6	1
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0
Total Split (s)	25.0	30.0	35.0	21.0	26.0	35.0	50.0	50.0	17.0	32.0
Total Split (%)	21.2%	25.4%	29.7%	17.8%	22.0%	29.7%	42.4%	42.4%	14.4%	27.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	18.3	11.4	41.2	14.0	7.1	59.2	48.2	48.2	35.4	29.4
Actuated g/C Ratio	0.18	0.11	0.41	0.14	0.07	0.59	0.48	0.48	0.36	0.29
v/c Ratio	0.79	0.20	0.77	0.70	0.37	0.43	0.18	0.21	0.04	0.85
Control Delay	57.6	43.9	29.9	49.8	28.5	16.0	15.4	3.0	13.2	43.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.6	43.9	29.9	49.8	28.5	16.0	15.4	3.0	13.2	43.4
LOS	E	D	C	D	C	B	B	A	B	D
Approach Delay	39.1			44.8		12.5			42.8	
Approach LOS	D			D		B			D	
Intersection Summary										
Cycle Length: 118										
Actuated Cycle Length: 99.7										
Natural Cycle: 90										
Control Type: Semi Act-Uncoord										
Maximum v/c Ratio: 0.85										
Intersection Signal Delay: 34.5										
Intersection Capacity Utilization 74.5%										
Analysis Period (min) 15										
Spits and Phases: 1: Jefferson St. & Singer Blvd.										

2029 PM Peak NOBUILD Conditions - Existing Geometry
Synchro 10 Report
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HCM 6th Signalized Intersection Summary
1: Jefferson St. & Singer Blvd.

Terry O. Brown, PE
12/18/2018

Movement	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Left	1	1	1	1	1	1	1	1	1	1	1
Lane Configurations	234	39	490	311	47	49	204	288	166	16	664
Future Volume (veh/h)	234	39	490	311	47	49	204	288	166	16	664
Initial Q (Q0), veh	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	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
Work Zone On Approach	No	No	No	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Sat Flow Rate, veh/h	252	42	527	334	51	53	219	310	0	17	714
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh. %	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	283	431	518	404	334	298	340	1473	533	1063	225
Arrive On Green	0.16	0.23	0.23	0.12	0.19	0.19	0.10	0.42	0.00	0.05	0.37
Sat Flow, veh/h	1767	1856	1572	3428	1763	1572	1767	3526	1572	1767	2896
Grip Volume(v), veh/h	252	42	527	334	51	53	219	310	0	17	434
Grip Sat Flow(s),veh/h	1767	1856	1572	1714	1763	1572	1767	1763	1572	1767	1763
Q Serve(g, s), s	15.0	1.9	25.0	10.3	2.6	3.0	7.9	6.0	0.0	0.6	22.3
Cycle Q Clear(g, c), s	15.0	1.9	25.0	10.3	2.6	3.0	7.9	6.0	0.0	0.6	22.3
Prop In Lane	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.35
Lane Grp Cap(c), veh/h	283	431	518	404	334	298	340	1473	533	647	641
V/C Ratio(X)	0.89	0.10	1.02	0.83	0.15	0.18	0.64	0.21	0.03	0.67	0.67
Avail Cap(c, a), veh/h	328	431	518	509	344	307	661	1473	648	647	641
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
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.3	32.5	36.1	46.4	36.4	36.6	20.6	20.0	0.0	18.7	28.6
Inor Delay (d2), s/veh	22.5	0.1	44.1	8.8	0.2	0.3	2.0	0.3	0.0	0.0	5.5
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
%ile BackOfQ(95%),veh/m3.0	1.6	27.1	8.4	2.1	2.1	6.0	4.6	0.0	0.0	0.5	15.4
Unsig. Movement Delay, s/veh	66.8	32.6	80.2	55.2	36.6	36.9	22.7	20.3	0.0	18.7	34.1
LnGrp Delay(d),s/veh	66.8	32.6	80.2	55.2	36.6	36.9	22.7	20.3	0.0	18.7	34.1
LnGrp LOS	E	C	F	E	D	D	C	C	B	C	C
Approach Vol, veh/h	821			438			529		A	882	
Approach Delay, s/veh	73.6			50.8			21.3		33.8		
Approach LOS	E			D			C		C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8			
Phs Duration (G+Y+Rc),s10.0	50.0	17.7	30.0	15.5	44.5	22.3	25.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax)230	45.0	16.0	25.0	30.0	27.0	20.0	21.0				
Max Q Clear Time (g, c+1)26	8.0	12.3	27.0	9.9	24.3	17.0	5.0				
Green Ext Time (p, c), s	0.0	2.2	0.4	0.0	0.6	1.4	0.2	0.4			
Intersection Summary											
HCM 6th Ctrl Delay	46.4										
HCM 6th LOS	D										
Notes	Unsignalized Delay for INBRI is excluded from calculations of the approach delay and intersection delay.										

2029 PM Peak NOBUILD Conditions - Existing Geometry
Synchro 10 Report
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Timings 2: Jefferson St. & I-25 W. Ramp

Terry O. Brown, PE
12/18/2018

Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations	4T	4T	4T	4T	4T	4T	4T
Traffic Volume (vph)	382	518	50	408	607	1318	649
Future Volume (vph)	382	518	50	408	607	1318	649
Turn Type	Perm	NA	Perm	pm-pt	NA	NA	Perm
Protected Phases	8	8	8	5	2	6	6
Permitted Phases	8	8	8	5	2	6	6
Detector Phase	8	8	8	5	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	10.0	21.0	21.0	21.0
Total Split (s)	30.0	30.0	30.0	31.0	75.0	44.0	44.0
Total Split (%)	28.6%	28.6%	28.6%	29.5%	71.4%	41.9%	41.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag				Lead	Lag	Lag	Lag
Lead-Lag Optimize?							
Recall Mode							
Act Effct Green (s)	24.1	24.1	24.1	70.9	70.9	42.2	42.2
Actuated g/C Ratio	0.23	0.23	0.23	0.68	0.68	0.40	0.40
v/c Ratio	0.84	0.84	0.84	0.92	0.92	0.99	0.99
Control Delay	59.2	49.5	50.0	48.5	48.5	53.5	60.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.2	49.5	50.0	48.5	48.5	53.5	60.8
LOS	E	D	A	D	A	D	E
Approach Delay	50.1			24.6	55.9		
Approach LOS	D			C	E		
Intersection Summary							
Cycle Length: 105							
Actuated Cycle Length: 105							
Offset: 0.7 (1%), Referenced to phase 2:NBT and 6:SBT, Start of Green							
Natural Cycle: 75							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 0.99							
Intersection Signal Delay: 48.4							
Intersection Capacity Utilization 92.2%							
Analysis Period (min) 15							
Splits and Phases: 2: Jefferson St. & I-25 W. Ramp							
102 (R)							
OS							
OS							
OS							
OS							

2029 PM Peak NOBUILD Conditions - Existing Geometry
Synchro 10 Report
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HCM 6th Signalized Intersection Summary 2: Jefferson St. & I-25 W. Ramp

Terry O. Brown, PE
12/18/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				4T	4T	4T	4T	4T	4T	4T	4T	4T
Traffic Volume (veh/h)	0	0	0	382	518	50	408	607	0	0	1318	649
Future Volume (veh/h)	0	0	0	382	518	50	408	607	0	0	1318	649
Initial Q (Qb), veh				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	1.00
Parking Bus, Adj				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	No	No	No	No	No
Adj Sat Flow, veh/h				1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				316	666	53	429	639	0	0	1387	683
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %				3	3	3	3	3	0	0	3	3
Cap, veh/h				379	796	337	452	2433	0	0	1527	681
Arrive On Green				0.21	0.21	0.21	0.42	1.00	0.00	0.00	0.43	0.43
Sat Flow, veh/h				1767	3711	1572	1767	3818	0	0	3618	1572
Grip Volume(v), veh/h				316	666	53	429	639	0	0	1387	683
Grip Sat Flow(s), veh/h				1767	1856	1572	1767	1763	0	0	1763	1572
Q Serve(g, s), s				18.0	18.0	2.9	19.4	0.0	0.0	0.0	38.6	45.5
Cycle Q Clear(g_c), s				18.0	18.0	2.9	19.4	0.0	0.0	0.0	38.6	45.5
Prop In Lane				1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00
Lane Grip Cap(c), veh/h				379	796	337	452	2433	0	0	1527	681
V/C Ratio(X)				0.83	0.84	0.16	0.95	0.26	0.00	0.00	0.91	1.00
Avail Cap(c), veh/h				421	884	374	519	2433	0	0	1527	681
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				39.4	39.5	33.5	21.0	0.0	0.0	0.0	27.8	29.8
Uniform Delay (d), s/veh				12.4	6.5	0.2	17.3	0.1	0.0	0.0	5.3	25.4
Incr Delay (d2), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh				13.9	13.7	2.0	13.1	0.1	0.0	0.0	21.5	26.7
%ile BackOfQ(95%), veh/h												
Unsig. Movement Delay, s/veh				51.8	46.0	33.7	38.3	0.1	0.0	0.0	33.1	55.2
LnGrp Delay(d), s/veh												
LnGrp LOS				D	D	C	D	A	A	A	C	F
Approach Vol, veh/h				1035			1068				2070	
Approach Delay, s/veh				47.1			15.5				40.4	
Approach LOS				D			B				D	
Timer - Assigned Phs				2			5				6	
Phs Duration (G+Y+Rc), s				77.5			27.0				27.5	
Change Period (Y+Rc), s				5.0			5.0				5.0	
Max Green Setting (Gmax), s				70.0			26.0				25.0	
Max Q Clear Time (g_c+1), s				2.0			21.4				20.0	
Green Ext Time (g_e), s				5.2			0.6				2.5	
Intersection Summary												
HCM 6th Ctrl Delay				35.7								
HCM 6th LOS				D								
Notes												
User approved volume balancing among the lanes for turning movement.												

2029 PM Peak NOBUILD Conditions - Existing Geometry
Synchro 10 Report
2029PNX.syn

Timings 3: Jefferson St. & I-25 E. Ramp

Terry O. Brown, PE
12/18/2018

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations	4↑	4↑	4↑	4↑	4↑	4↑
Traffic Volume (vph)	506	690	219	509	321	997
Future Volume (vph)	506	690	219	509	321	997
Turn Type	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	4	4	4	2	1	6
Permitted Phases	4	4	4	2	6	6
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	10.0	21.0
Total Split (s)	40.0	40.0	40.0	41.0	24.0	65.0
Total Split (%)	38.1%	38.1%	38.1%	39.0%	22.9%	61.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Min	Min	Min	C-Max	Min	C-Max
Act Effd Green (s)	33.9	33.9	33.9	38.5	61.1	61.1
Actuated g/C Ratio	0.32	0.32	0.32	0.37	0.58	0.58
v/c Ratio	0.81	0.80	0.41	0.75	0.87	0.52
Control Delay	45.8	38.8	18.3	31.1	49.2	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	45.8	38.8	18.3	31.1	49.2	17.2
LOS	D	D	B	C	D	B
Approach Delay						
Approach LOS	D	D	C	C	C	C
Intersection Summary						
Cycle Length: 105						
Actuated Cycle Length: 105						
Offset: 2.1 (2%), Referenced to phase 2:NBT and 6:SBTL, Start of Green						
Natural Cycle: 60						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 0.87						
Intersection Signal Delay: 31.4						
Intersection Capacity Utilization 92.2%						
Analysis Period (min) 15						
Splits and Phases: 3: Jefferson St. & I-25 E. Ramp						
	101	102 (R)	103	104	105	106

HCM 6th Signalized Intersection Summary 3: Jefferson St. & I-25 E. Ramp

Terry O. Brown, PE
12/18/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	4↑	4↑	4↑	0	0	0	0	0	0	0	0	0
Traffic Volume (veh/h)	506	690	219	0	0	0	0	509	376	321	997	0
Future Volume (veh/h)	506	690	219	0	0	0	0	509	376	321	997	0
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	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	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h	1856	1856	1856	0	0	0	0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	424	894	233	0	0	0	0	541	400	341	1061	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	0	0	0	0	3	3	3	3	0
Cap, veh/h	523	1099	466	0	0	0	0	822	608	427	2145	0
Arrive On Green	0.30	0.30	0.30	0.00	0.43	0.43	0.00	0.43	0.27	0.27	1.00	0.00
Sat Flow, veh/h	1767	3711	1572	0	0	0	0	2025	1429	1767	3618	0
Grp Sat Flow(s), veh/h	424	894	233	0	0	0	0	493	448	341	1061	0
Grp Sat Flow(s), veh/h	1767	1856	1572	0	0	0	0	1763	1598	1767	1763	0
Q Serve(g, s), s	23.3	23.5	12.9	0.0	23.4	23.5	0.0	23.4	23.5	11.7	0.0	0.0
Cycle Q Clear(g, c), s	23.3	23.5	12.9	0.0	23.4	23.5	0.0	23.4	23.5	11.7	0.0	0.0
Prop In Lane	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
Lane Grp Cap(c), veh/h	523	1099	466	0	0	0	0	750	680	427	2145	0
V/C Ratio(X)	0.81	0.81	0.50	0.00	0.66	0.66	0.00	0.66	0.80	0.49	0.00	0.00
Avail Cap(c, a), veh/h	569	1237	524	0	0	0	0	750	680	508	2145	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(i)	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.19	0.19	0.00
Uniform Delay (d), s/veh	34.2	34.3	30.5	0.0	24.1	24.1	0.0	24.1	24.1	14.9	0.0	0.0
Incr Delay (d2), s/veh	7.5	3.9	0.8	0.0	4.5	4.9	0.0	4.5	4.9	1.5	0.2	0.0
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(95%), veh/m/6.4	16.4	8.6	1.6	0.0	15.7	14.6	0.0	15.7	14.6	4.7	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	41.8	38.1	31.4	0.0	28.5	28.0	0.0	28.5	28.0	16.4	0.2	0.0
LnGrp LOS	D	D	C	A	C	C	A	C	C	B	A	A
Approach Vol, veh/h	1551			941			1402					
Approach Delay, s/veh	38.1			28.8			4.1					
Approach LOS	D			C			A					
Timer - Assigned Phs	1	2	4	6								
Phs Duration (G+Y+Rc), s/19.2	49.7	36.1	68.9									
Change Period (Y+Rc), s	5.0	5.0	5.0									
Max Green Setting (Gmax)19.0	36.0	35.0	60.0									
Max Q Clear Time (g_c+1139)	25.5	25.5	2.0									
Green Ext Time (g_c), s	0.5	5.7	10.4									
Intersection Summary												
HCM 6th Ctrl Delay		23.6										
HCM 6th LOS		C										
Notes												
User approved volume balancing among the lanes for turning movement.												

Timings
4: Jefferson St. & McLeod Rd.

Terry O. Brown, PE
12/18/2018

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	14	70	108	13	345	11	494	423
Traffic Volume (vph)	14	70	108	13	345	11	494	423
Future Volume (vph)	14	70	108	13	345	11	494	423
Turn Type	Perm	NA	Perm	NA	pm+ov	pm+pt	NA	pm+pt
Protected Phases	4	4	8	8	1	5	2	1
Permitted Phases	4	4	8	8	2	2	6	6
Detector Phase	4	4	8	8	1	5	2	1
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	21.0	21.0	21.0	10.0	10.0	21.0	10.0	21.0
Minimum Split (s)	43.0	43.0	43.0	20.0	20.0	37.0	20.0	37.0
Total Split (s)	43.0%	43.0%	43.0%	20.0%	20.0%	37.0%	20.0%	37.0%
Total Split (%)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Yellow Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Min	Min	Min	Min	Min	Min	Min	Min
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	12.0	12.0	12.0	32.0	32.0	32.0	32.0	32.0
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
v/c Ratio	0.07	0.34	0.57	0.05	0.50	0.03	0.44	0.72
Control Delay	26.1	24.9	39.6	25.5	12.3	5.7	15.7	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.1	24.9	39.6	25.5	12.3	5.7	15.7	13.8
LOS	C	C	D	C	B	A	B	B
Approach Delay	25.0	25.0	19.0	19.0	15.5	15.5	11.7	11.7
Approach LOS	C	C	B	B	B	B	B	B
Intersection Summary								
Cycle Length: 100								
Actuated Cycle Length: 74.1								
Natural Cycle: 60								
Control Type: Semi Act-Uncoord								
Maximum v/c Ratio: 0.72								
Intersection Signal Delay: 14.8								
Intersection Capacity Utilization: 65.8%								
Analysis Period (min): 15								
Splits and Phases:	4: Jefferson St. & McLeod Rd.							
	01	02	03	04	05	06	07	08
	01	02	03	04	05	06	07	08

2029 PM Peak NOBUILD Conditions - Existing Geometry
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HCM 6th Signalized Intersection Summary
4: Jefferson St. & McLeod Rd.

Terry O. Brown, PE
12/18/2018

Movement	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	14	70	108	13	345	11	494	423
Traffic Volume (veh/h)	14	70	108	13	345	11	494	423
Future Volume (veh/h)	14	70	108	13	345	11	494	423
Initial Q (Ob) veh	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, AdjT)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	15	75	28	116	14	371	12	531
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3
Cap, veh/h	317	300	112	329	432	631	489	1165
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
Sat Flow, veh/h	990	1288	481	1281	1856	1572	1767	2859
Grip Volume(v), veh/h	15	0	103	116	14	371	12	327
Grip Sat Flow(s), veh/h	990	0	1769	1281	1856	1572	1767	1767
Q Serve(g, s), s	0.9	0.0	3.7	6.4	0.5	14.5	0.3	10.6
Cycle Q Clear(g, s), s	1.4	0.0	3.7	10.1	0.5	14.5	0.3	10.6
Prop In Lane	1.00	0.27	1.00	1.00	1.00	1.00	0.37	1.00
Lane Grip Cap(c), veh/h	317	0	412	329	432	631	489	719
V/C Ratio(X)	0.05	0.00	0.25	0.35	0.03	0.59	0.02	0.45
Avail Cap(c, a), veh/h	565	0	866	861	888	1026	714	709
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	0.0	24.5	28.6	23.3	18.4	11.1	16.9
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.6	0.0	0.9	0.0	2.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%), veh/m 0.4	0.0	0.0	2.8	3.5	0.4	8.8	0.2	7.9
Unsig. Movement Delay, s/veh	23.9	0.0	24.8	29.3	23.3	19.3	11.1	19.0
LnGrp Delay(d), s/veh	23.9	0.0	24.8	29.3	23.3	19.3	11.1	19.0
LnGrp LOS	C	A	C	C	B	B	B	B
Approach Vol, veh/h	118	118	501	501	663	663	1174	1174
Approach Delay, s/veh	24.7	24.7	21.7	21.7	18.9	18.9	14.0	14.0
Approach LOS	C	C	C	C	B	B	B	B
Timer - Assigned Phs	1	2	4	5	6	8		
Phs Duration (G+Y+R), s/veh	18.2	37.0	23.3	10.0	45.2	23.3		
Change Period (Y+R), s	5.0	5.0	5.0	5.0	5.0	5.0		
Max Green Setting (Gmax), s	32.0	32.0	38.0	15.0	32.0	38.0		
Max Q Clear Time (g, c+11/28)	12.7	12.7	5.7	2.3	11.5	16.5		
Green Ext Time (p, c), s	0.4	4.0	0.6	0.0	4.5	1.8		
Intersection Summary								
HCM 6th Ctrl Delay	17.4							
HCM 6th LOS	B							

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Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑↑	↑↑	
Traffic Vol, veh/h	4	14	11	865	1083	30
Future Vol, veh/h	4	14	11	865	1083	30
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	83	83	83	83	83	83
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	5	17	13	1042	1305	36

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1870	671	1341	0	-	0
Stage 1	1323	-	-	-	-	-
Stage 2	547	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	128	*625	832	-	-	-
Stage 1	523	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	123	*625	832	-	-	-
Mov Cap-2 Maneuver	123	-	-	-	-	-
Stage 1	504	-	-	-	-	-
Stage 2	541	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.8	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	832	-	328	-	-
HCM Lane V/C Ratio	0.016	-	0.066	-	-
HCM Control Delay (s)	9.4	0.2	16.8	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

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

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	0	0	16	1	39	1	885	15	36	1180	1
Future Vol, veh/h	0	0	0	16	1	39	1	885	15	36	1180	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	35	-	-	-	-	-	-	-	-	-	-	75
Veh in Median Storage, #	0	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	17	1	41	1	941	16	38	1255	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1804	2290	628	1655	2283	479	1256	0	0	957	0	0
Stage 1	1331	1331	-	951	951	-	-	-	-	-	-	-
Stage 2	473	959	-	704	1332	-	-	-	-	-	-	-
Critical Hdwy	7.56	6.56	6.96	7.56	6.56	6.96	4.16	-	-	4.16	-	-
Critical Hdwy Stg 1	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.56	5.56	-	6.56	5.56	-	-	-	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	3.53	4.03	3.33	2.23	-	-	2.23	-	-
Pot Cap-1 Maneuver	143	*49	*596	*224	*50	530	*891	-	-	708	-	-
Stage 1	*562	*493	-	*277	*334	-	-	-	-	-	-	-
Stage 2	*538	*331	-	*562	*493	-	-	-	-	-	-	-
Platoon blocked, %	1	1	1	1	1	1	-	-	-	-	-	-
Mov Cap-1 Maneuver	11	*40	*596	*193	*41	530	*891	-	-	708	-	-
Mov Cap-2 Maneuver	11	*40	-	*193	*41	-	-	-	-	-	-	-
Stage 1	*561	*405	-	*276	*333	-	-	-	-	-	-	-
Stage 2	*493	*330	-	*462	*405	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	19.4	0	1.2
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBFLn1	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	* 891	-	-	-	-	310	708	-
HCM Lane V/C Ratio	0.001	-	-	-	-0.192	0.054	-	-
HCM Control Delay (s)	9	0	-	0	0	19.4	10.4	0.9
HCM Lane LOS	A	A	-	A	A	C	B	A
HCM 95th %tile Q(veh)	0	-	-	-	-	0.7	0.2	-

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

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑↑	↑↑	
Traffic Vol, veh/h	1	1	1	869	1113	1
Future Vol, veh/h	1	1	1	869	1113	1
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	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	1	1	1	924	1184	1

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1649	593	1185	0	-	0
Stage 1	1185	-	-	-	-	-
Stage 2	464	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	*225	*625	*935	-	-	-
Stage 1	*591	-	-	-	-	-
Stage 2	*596	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	*224	*625	*935	-	-	-
Mov Cap-2 Maneuver	*224	-	-	-	-	-
Stage 1	*590	-	-	-	-	-
Stage 2	*596	-	-	-	-	-

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

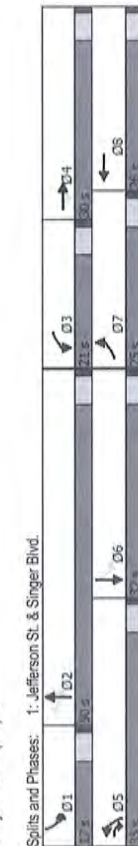
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	* 935	-	330	-	-
HCM Lane V/C Ratio	0.001	-	0.006	-	-
HCM Control Delay (s)	8.9	0	16	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

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

Timings 1: Jefferson St. & Singer Blvd. Terry O. Brown, PE 12/19/2018

EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
18.3	11.4	41.2	14.0	7.1	59.2	48.2	48.2	35.4	29.4
0.18	0.11	0.41	0.14	0.07	0.59	0.48	0.36	0.29	0.29
0.79	0.20	0.77	0.70	0.37	0.43	0.19	0.21	0.04	0.86
57.6	43.9	23.9	49.8	28.5	16.0	15.4	3.0	13.2	44.2
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57.6	43.9	23.9	49.8	28.5	16.0	15.4	3.0	13.2	44.2
E	D	C	D	C	B	B	A	B	D
39.1				44.8		12.5			43.6
D				D		B			D

Intersection Summary	
Cycle Length: 118	
Actuated Cycle Length: 99.7	
Natural Cycle: 90	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 34.7	
Intersection Capacity Utilization 74.8%	
Analysis Period (min) 15	



HCM 6th Signalized Intersection Summary 1: Jefferson St. & Singer Blvd. Terry O. Brown, PE 12/19/2018

EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SSR
234	39	490	311	47	204	297	166	16	673	140
234	39	490	311	47	204	297	166	16	673	140
0	0	0	0	0	0	0	0	0	0	0
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
252	42	527	334	51	53	219	319	0	17	724
0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
3	3	3	3	3	3	3	3	3	3	3
283	431	518	404	334	288	337	1473	528	1066	222
0.16	0.23	0.23	0.12	0.19	0.19	0.10	0.42	0.00	0.05	0.37
1767	1856	1572	3428	1763	1572	1767	3526	1572	1767	2904
252	42	527	334	51	53	219	319	0	17	439
1767	1856	1572	1714	1763	1572	1767	1763	1572	1767	1747
15.0	1.9	25.0	10.3	2.6	3.0	7.9	6.2	0.0	0.6	22.6
15.0	1.9	25.0	10.3	2.6	3.0	7.9	6.2	0.0	0.6	22.6
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
283	431	518	404	334	288	337	1473	528	647	641
0.89	0.10	1.02	0.83	0.15	0.18	0.65	0.22	0.03	0.68	0.68
328	431	518	509	344	307	658	1473	643	647	641
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
44.3	32.5	36.1	46.4	36.4	36.6	20.8	20.1	0.0	18.7	28.7
22.5	0.1	44.1	8.8	0.2	0.3	2.1	0.3	0.0	0.0	5.7
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13.0	1.6	27.1	8.4	2.1	2.1	6.0	4.7	0.0	0.5	15.7
66.8	32.6	80.2	55.2	36.6	36.9	22.9	20.4	0.0	18.7	34.4
E	C	F	E	D	D	C	C	B	C	C
821			438			538		A		892
73.6			50.8			21.4				34.1
E			D			C				C

1	2	3	4	5	6	7	8
10.0	50.0	17.7	30.0	15.5	44.5	22.3	25.4
5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
12.0	45.0	16.0	25.0	30.0	27.0	20.0	21.0
2.6	8.2	12.3	27.0	9.9	24.6	17.0	5.0
0.0	2.3	0.4	0.0	0.6	1.3	0.2	0.4

Intersection Summary	
HCM 6th Ctrl Delay	46.4
HCM 6th LOS	D

Timings 2: Jefferson St. & I-25 W. Ramp Terry O. Brown, PE 12/19/2018

Lane Group	WBL	WBT	WBR	NBL	NBT	SBL	SBR
Lane Configurations	4	4	4	4	4	4	4
Traffic Volume (vph)	393	518	50	442	616	1327	649
Future Volume (vph)	393	518	50	442	616	1327	649
Turn Type	Perm	NA	Perm	pm+pt	NA	NA	Perm
Protected Phases	8	8	8	2	2	6	6
Permitted Phases	8	8	8	5	5	2	2
Detector Phase	8	8	8	5	5	2	2
Switch Phase	8	8	8	5	5	2	2
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	10.0	21.0	21.0	21.0
Total Split (s)	30.0	30.0	30.0	31.0	75.0	44.0	44.0
Total Split (%)	28.6%	28.6%	28.6%	29.5%	71.4%	41.9%	41.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	Min	Min	Min	Min	Min	Min	Min
Act Effct Delay (s)	24.3	24.3	24.3	70.7	70.7	40.6	40.6
Actuated g/C Ratio	0.23	0.23	0.23	0.67	0.67	0.39	0.39
v/c Ratio	0.84	0.84	0.13	0.95	0.27	1.03	1.03
Control Delay	59.3	49.6	4.9	54.0	8.9	65.7	73.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.3	49.6	4.9	54.0	8.9	65.7	73.3
LOS	E	D	A	D	A	E	E
Approach Delay	50.2					27.8	68.2
Approach LOS	D					C	E
Intersection Summary							
Cycle Length: 105							
Actuated Cycle Length: 105							
Offset: 0.7 (1%), Referenced to phase 2:NBT and 6:SBL, Start of Green							
Natural Cycle: 90							
Control Type: Actuated-Coordinated							
Maximum v/c Ratio: 1.03							
Intersection Signal Delay: 53.2							
Intersection Capacity Utilization 94.3%							
Analysis Period (min) 15							
Splits and Phases: 2: Jefferson St. & I-25 W. Ramp							
Phase 2 (R)							
Phase 5 (R)							
Phase 6 (R)							
Phase 8 (R)							

2029 PM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report

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HCM 6th Signalized Intersection Summary 2: Jefferson St. & I-25 W. Ramp Terry O. Brown, PE 12/19/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations				4	4	4	4	4	4	4	4
Traffic Volume (veh/h)	0	0	0	393	518	50	442	616	0	0	1327
Future Volume (veh/h)	0	0	0	393	518	50	442	616	0	0	1327
Initial Q (Ob), veh				0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pct)				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
Work Zone On Approach				No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h				1856	1856	1856	1856	1856	0	0	1856
Adj Flow Rate, veh/h				320	677	53	465	648	0	0	1397
Peak Hour Factor				0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh. %				3	3	3	3	3	0	0	3
Cap. veh/h				383	804	341	484	2426	0	0	1437
Arrive On Green				0.22	0.22	0.22	0.47	1.00	0.00	0.00	0.41
Sat Flow, veh/h				1767	3711	1572	1767	3618	0	0	3618
Gp Volume(v), veh/h				320	677	53	465	648	0	0	1397
Gp Sat Flow(s), veh/h				1767	1856	1572	1767	1763	0	0	1763
Q Serve(g, s)				18.2	18.4	2.9	22.1	0.0	0.0	0.0	40.8
Cycle Q Clear(g, c), s				18.2	18.4	2.9	22.1	0.0	0.0	0.0	40.8
Prop In Lane				1.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00
Lane Grp Cap(c), veh/h				383	804	341	484	2426	0	0	1437
V/C Ratio(X)				0.84	0.84	0.16	0.96	0.27	0.00	0.00	0.97
Avail Cap(c, a), veh/h				421	884	374	510	2426	0	0	1437
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	1.00	1.00	0.50	0.50	0.00	0.00	0.50
Uniform Delay (d), s/veh				39.3	39.4	33.3	20.1	0.0	0.0	0.0	31.1
Incr Delay (d2), s/veh				12.7	6.9	0.2	19.0	0.1	0.0	0.0	11.4
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/h				14.1	14.0	2.0	13.5	0.1	0.0	0.0	24.0
Unsig. Movement Delay, s/veh				52.1	46.3	33.5	39.2	0.1	0.0	0.0	41.9
LnGrp Delay(d), s/veh				52.1	46.3	33.5	39.2	0.1	0.0	0.0	41.9
LnGrp LOS				D	D	C	D	A	A	A	D
Approach Vol, veh/h				1050				1113			2080
Approach Delay, s/veh				47.4				16.4			53.0
Approach LOS				D				B			D
Timer - Assigned Phs	2			5	6			8			
Phs Duration (G+Y+Rc), s	77.2			29.4	47.8			27.8			
Change Period (Y+Rc), s	5.0			5.0	5.0			5.0			
Max Green Setting (Gmax), s	70.0			26.0	39.0			25.0			
Max Q Clear Time (g_c+1), s	2.0			24.1	44.8			20.4			
Green Ext Time (p_c), s	5.3			0.3	0.0			2.4			
Intersection Summary											
HCM 6th Ctrl Delay				42.0							
HCM 6th LOS				D							
Notes											
User approved volume balancing among the lanes for turning movement.											

2029 PM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report

2029PBX syn

Timings 3: Jefferson St. & I-25 E. Ramp Terry O. Brown, PE 12/19/2018

Lane Group	EBL	EBT	EBR	NBT	SBL	SBT
Lane Configurations	4	4	4	4	4	4
Traffic Volume (vph)	506	690	254	552	321	1018
Future Volume (vph)	506	690	254	552	321	1018
Turn Type	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	4	4	4	2	1	6
Permitted Phases	4	4	4	4	6	6
Detector Phase	4	4	4	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	10.0	21.0
Total Split (s)	40.0	40.0	40.0	41.0	24.0	65.0
Total Split (%)	38.1%	38.1%	38.1%	39.0%	22.9%	61.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Min	Min	Min	C-Max	Min	C-Max
Act Effct Green (s)	33.9	33.9	33.9	38.2	61.1	61.1
Actuated g/C Ratio	0.32	0.32	0.32	0.36	0.58	0.58
vic Ratio	0.81	0.80	0.48	0.80	0.90	0.53
Control Delay	45.8	38.8	21.6	33.7	51.9	17.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	45.8	38.8	21.6	33.7	51.9	17.7
LOS	D	D	C	C	D	B
Approach Delay						
Approach LOS	D	D	C	C	D	C
Intersection Summary						
Cycle Length: 105						
Actuated Cycle Length: 105						
Offset: 2.1 (2%), Referenced to phase 2/NBT and 6/SBT, Start of Green						
Natural Cycle: 70						
Control Type: Actuated-Coordinated						
Maximum v/c Ratio: 0.90						
Intersection Signal Delay: 32.4						
Intersection Capacity Utilization 94.3%						
Analysis Period (min) 15						
Splits and Phases: 3: Jefferson St. & I-25 E. Ramp						

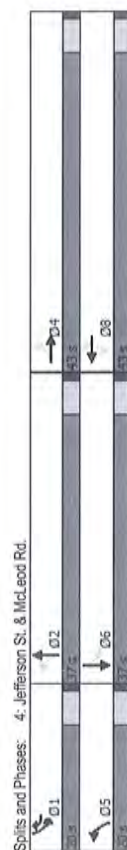
HCM 6th Signalized Intersection Summary 3: Jefferson St. & I-25 E. Ramp Terry O. Brown, PE 12/19/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SSR
Lane Configurations	4	4	4	0	0	0	0	0	0	4	4	4
Traffic Volume (veh/h)	506	690	254	0	0	0	0	552	387	321	1018	0
Future Volume (veh/h)	506	690	254	0	0	0	0	552	387	321	1018	0
Initial Q (Ob), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A, pct)	1.00	1.00	1.00	1.00	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	No	No	No	No	No	No	No	No
Adj Sat Flow, veh/h	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	424	894	270	0	0	0	0	567	412	341	1083	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	525	1102	467	0	0	0	0	841	590	410	2143	0
Arrive On Green	0.30	0.30	0.30	0.00	0.42	0.42	0.00	0.42	0.42	0.27	1.00	0.00
Sat Flow, veh/h	1767	3711	1572	0	0	0	0	2072	1389	1767	3618	0
Grp Volume(V), veh/h	424	894	270	0	0	0	0	523	476	341	1083	0
Grp Sat Flow(s), veh/h	1767	1856	1572	0	0	0	0	1763	1606	1767	1763	0
Q Serve(g, s), s	23.3	23.4	15.3	0.0	25.5	25.5	0.0	25.5	25.5	11.7	0.0	0.0
Cycle Q Clear(g, s), s	23.3	23.4	15.3	0.0	25.5	25.5	0.0	25.5	25.5	11.7	0.0	0.0
Prop In Lane	1.00	1.00	1.00	0.00	0.87	0.87	0.00	0.87	0.87	1.00	0.00	0.00
Lane Grp Cap(c), veh/h	525	1102	467	0	749	749	0	749	682	410	2143	0
V/C Ratio(X)	0.81	0.81	0.58	0.00	0.70	0.70	0.00	0.70	0.70	0.83	0.51	0.00
Avail Cap(c, a), veh/h	589	1237	524	0	749	749	0	749	682	490	2143	0
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.10	0.10	0.00
Uniform Delay (d), s/veh	34.1	34.2	31.3	0.0	24.7	24.7	0.0	24.7	24.7	15.8	0.0	0.0
Incr Delay (d2), s/veh	7.5	3.8	1.3	0.0	5.4	5.9	0.0	5.4	5.9	1.1	0.1	0.0
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(95%), veh/h	16.3	16.4	9.9	0.0	17.0	15.8	0.0	17.0	15.8	4.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	41.6	38.0	32.6	0.0	30.0	30.6	0.0	30.0	30.6	16.9	0.1	0.0
LnGrp LOS	D	D	C	A	C	C	A	C	C	B	A	A
Approach Vol, veh/h		1588						999			1424	
Approach Delay, s/veh		38.0						30.3			4.1	
Approach LOS		D						C			A	
Timer - Assigned Phs	1	2	4	4	6							
Phs Duration (G+Y+Rc), s	19.2	49.6	36.2	36.2	68.8							
Charge Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0							
Max Green Setting (Gmax), s	19.0	36.0	35.0	35.0	60.0							
Max Q Clear Time (g_c+1t), s	13.7	27.5	25.4	25.4	2.0							
Green Ext Time (g_e), s	0.5	4.2	5.7	5.7	10.8							
Intersection Summary												
HCM 6th Ctrl Delay								24.1				
HCM 6th LOS								C				
Notes												
User approved volume balancing among the lanes for turning movement.												

Timings 4: Jefferson St. & McLeod Rd.

Terry O. Brown, PE
12/19/2018

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group								
Lane Configurations	17	70	108	13	418	11	560	493
Traffic Volume (vph)	17	70	108	13	418	11	560	493
Future Volume (vph)	17	70	108	13	418	11	560	493
Turn Type	Perm	NA	Perm	NA	pm-pt	pm-pt	NA	pm-pt
Protected Phases	4	4	8	8	1	5	2	1
Permitted Phases	4	4	8	8	1	5	2	1
Detector Phase	4	4	8	8	1	5	2	1
Switch Phase	4	4	8	8	1	5	2	1
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	10.0	21.0	10.0	21.0
Total Split (s)	43.0	43.0	43.0	43.0	20.0	37.0	20.0	37.0
Total Split (%)	43.0%	43.0%	43.0%	43.0%	20.0%	37.0%	20.0%	37.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Min	Min	Min	Min	Min	Min	Min	Min
Act/Ext Green (s)	12.0	12.0	32.0	37.8	32.1	52.1	41.4	41.4
Actuated g/C Ratio	0.16	0.16	0.16	0.43	0.51	0.43	0.70	0.56
g/C Ratio	0.08	0.34	0.57	0.05	0.62	0.03	0.48	0.40
Control Delay	26.3	24.9	39.6	25.5	16.8	5.7	16.4	29.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.3	24.9	39.6	25.5	16.8	5.7	16.4	29.0
LOS	C	C	D	C	B	A	B	C
Approach Delay	25.1		21.6			16.3		18.0
Approach LOS	C		C			B		B



2029 PM Peak BUILD Conditions - Existing Geometry
Synchro 10 Report
2029PBX syn

HCM 6th Signalized Intersection Summary 4: Jefferson St. & McLeod Rd.

Terry O. Brown, PE
12/19/2018

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Movement								
Lane Configurations	17	70	108	13	418	11	560	493
Traffic Volume (veh/h)	17	70	108	13	418	11	560	493
Future Volume (veh/h)	17	70	108	13	418	11	560	493
Initial Q (Ob.) veh	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
Work Zone On Approach	No	No	No	No	No	No	No	No
Adj Sat Flow (veh/h)	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	18	75	28	116	14	449	12	530
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh. %	3	3	3	3	3	3	3	3
Cap. veh/h	328	346	129	371	499	701	430	1106
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	922	1288	481	1281	1856	1572	1767	2931
Grp Volume (veh/h)	18	0	103	116	14	449	12	362
Grp Sat Flow (veh/h)	922	0	1769	1281	1856	1572	1767	1763
Q Serve (g. s.)	1.2	0.0	3.8	6.6	0.5	18.8	0.3	13.6
Cycle Q Clear (g. c.) s	1.7	0.0	3.8	10.4	0.5	18.8	0.3	13.6
Prop In Lane	1.00	0.00	0.27	1.00	1.00	1.00	0.33	1.00
Lane Grp Cap (veh/h)	328	0	476	371	499	701	430	685
V/C Ratio(X)	0.05	0.00	0.22	0.31	0.03	0.64	0.03	0.54
Avail Cap (c. a.) veh/h	493	0	793	601	832	983	639	665
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d) s/veh	23.5	0.0	24.1	28.1	22.8	18.2	13.6	20.7
Incr Delay (d2) s/veh	0.1	0.0	0.2	0.5	0.0	1.0	0.0	3.2
Initial Q Delay (d3) s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%) veh/h	0.5	0.0	2.9	3.6	0.4	10.8	0.2	9.9
Unsig. Movement Delay, s/veh	23.5	0.0	24.3	28.6	22.9	19.2	13.6	23.8
LnGrp Delay (d) s/veh	23.5	0.0	24.3	28.6	22.9	19.2	13.6	23.8
LnGrp LOS	C	A	C	C	C	B	C	C
Approach Vol, veh/h	121		579			734		1319
Approach Delay, s/veh	24.2		21.2			23.7		26.4
Approach LOS	C		C			C		C
Timer - Assigned Phs	1	2	4	5	6	8		
Phs Duration (G+Y+Rc) s	20.0	37.0	27.8	10.0	47.0	27.8		
Change Period (Y+Rc) s	5.0	5.0	5.0	5.0	5.0	5.0		
Max Green Setting (Gmax) s	15.0	32.0	38.0	15.0	32.0	38.0		
Max Q Clear Time (g_c+1) s	17.0	15.7	5.8	2.3	14.0	20.8		
Green Ext Time (p_c) s	0.0	4.2	0.7	0.0	4.8	2.0		
Intersection Summary								
HCM 6th Ctrl Delay			24.5					
HCM 6th LOS			C					

2029 PM Peak BUILD Conditions - Existing Geometry
Synchro 10 Report
2029PBX syn

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑↑	↑↑	
Traffic Vol, veh/h	5	14	11	1007	1220	31
Future Vol, veh/h	5	14	11	1007	1220	31
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	83	83	83	83	83	83
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	6	17	13	1213	1470	37

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	2122	754	1507	0	-	0
Stage 1	1489	-	-	-	-	-
Stage 2	633	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	77	*566	743	-	-	-
Stage 1	466	-	-	-	-	-
Stage 2	489	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	72	*566	743	-	-	-
Mov Cap-2 Maneuver	72	-	-	-	-	-
Stage 1	441	-	-	-	-	-
Stage 2	489	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	25.1	0.4	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	743	-	202	-	-
HCM Lane V/C Ratio	0.018	-	0.113	-	-
HCM Control Delay (s)	9.9	0.3	25.1	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-




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

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↕			↕			↕	↕
Traffic Vol, veh/h	0	0	0	16	0	39	0	939	15	36	1191	45
Future Vol, veh/h	0	0	0	16	0	39	0	939	15	36	1191	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	-	-	-	-	-	-	-	-	-	75
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	0	0	0	17	0	41	0	999	16	38	1267	48

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1717	2350	508	1267	0	0
Stage 1	1007	1007	-	-	-	-
Stage 2	710	1343	-	-	-	-
Critical Hdwy	6.86	6.56	6.96	4.16	-	4.16
Critical Hdwy Stg 1	5.86	5.56	-	-	-	-
Critical Hdwy Stg 2	5.86	5.56	-	-	-	-
Follow-up Hdwy	3.53	4.03	3.33	2.23	-	2.23
Pot Cap-1 Maneuver	80	35	507	539	-	673
Stage 1	312	314	-	-	-	-
Stage 2	446	217	-	-	-	-
Platoon blocked, %					-	-
Mov Cap-1 Maneuver	65	0	507	539	-	673
Mov Cap-2 Maneuver	65	0	-	-	-	-
Stage 1	312	0	-	-	-	-
Stage 2	361	0	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	36.9	0	1.3
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	539	-	-	170	673
HCM Lane V/C Ratio	-	-	-	0.344	0.057
HCM Control Delay (s)	0	-	-	36.9	10.7
HCM Lane LOS	A	-	-	E	B
HCM 95th %tile Q(veh)	0	-	-	1.4	0.2

Intersection						
Int Delay, s/veh	12.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	138	144	869	1113	11
Future Vol, veh/h	54	138	144	869	1113	11
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	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	57	147	153	924	1184	12
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1958	598	1196	0	-	0
Stage 1	1190	-	-	-	-	-
Stage 2	768	-	-	-	-	-
Critical Hdwy	6.86	6.96	4.16	-	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-	-
Follow-up Hdwy	3.53	3.33	2.23	-	-	-
Pot Cap-1 Maneuver	*102	*625	*935	-	-	-
Stage 1	*591	-	-	-	-	-
Stage 2	*416	-	-	-	-	-
Platoon blocked, %	1	1	1	-	-	-
Mov Cap-1 Maneuver	*68	*625	*935	-	-	-
Mov Cap-2 Maneuver	*68	-	-	-	-	-
Stage 1	*392	-	-	-	-	-
Stage 2	*416	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	140.2		2.4		0	
HCM LOS	F					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	* 935	-	189	-	-	
HCM Lane V/C Ratio	0.164	-	1.081	-	-	
HCM Control Delay (s)	9.6	1.2	140.2	-	-	
HCM Lane LOS	A	A	F	-	-	
HCM 95th %tile Q(veh)	0.6	-	9.8	-	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Traffic Count Data Sheet (Demand Adjusted)

Year Counts Taken: 2018

E-W Street:
N-S Street:Singer Blvd.
Jefferson St.Speed Limit (Singer Blvd.)= 30 MPH
Speed Limit (Jefferson St.)= 35 MPH
10/31/18

Signalized

Begin Time	End Time	Eastbound (Singer Blvd.)			Westbound (Singer Blvd.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	27	4	33	42	9	5	82	409	72	5	55	36
7:15 AM	7:30 AM	31	8	41	21	6	4	88	123	77	0	68	40
7:30 AM	7:45 AM	32	11	44	23	8	6	126	167	92	0	76	39
7:45 AM	8:00 AM	28	6	42	17	2	6	90	126	72	2	61	45
8:00 AM	8:15 AM	31	4	54	11	4	5	78	109	57	2	56	36
8:15 AM	8:30 AM	28	49	57	45	6	9	59	99	57	2	53	24
8:30 AM	8:45 AM	36	9	48	47	4	5	82	404	50	2	67	28
8:45 AM	9:00 AM	45	4	29	7	4	5	34	54	24	2	59	49
AM Peak Hour Volumes		122	29	181	72	20	21	382	525	298	4	20	160
Percent Approach		36.7%	8.7%	54.5%	63.7%	17.7%	18.6%	31.7%	43.6%	24.7%	4.5%	59.2%	36.3%

Intersection

0.93

0.76

0.78

0.90

Begin Time	End Time	Eastbound (Singer Blvd.)			Westbound (Singer Blvd.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	49	42	70	44	6	8	69	72	36	4	92	30
4:15 PM	4:30 PM	45	42	95	72	7	5	57	65	36	5	446	50
4:30 PM	4:45 PM	53	9	104	54	3	7	45	80	38	1	125	33
4:45 PM	5:00 PM	61	13	113	88	14	15	49	64	40	1	156	36
5:00 PM	5:15 PM	53	10	93	60	6	8	59	78	44	0	151	32
5:15 PM	5:30 PM	47	5	140	80	20	14	37	48	33	3	195	31
5:30 PM	5:45 PM	22	5	37	58	4	3	24	24	29	0	409	34
5:45 PM	6:00 PM	44	4	78	36	9	8	32	69	47	0	409	24
PM Peak Hour Volumes		214	37	450	282	43	44	190	270	155	5	627	132
Percent Approach		30.5%	5.3%	64.2%	76.4%	11.7%	11.9%	30.9%	43.9%	25.2%	1.9%	81.0%	17.1%

Intersection

0.91

0.79

0.85

0.83

AM Peak Hour Raw Count	121	29	180	65	18	19		374	515	293	20	261	160
% Change	1%	0%	1%	11%	11%	11%		2%	2%	2%	0%	0%	0%
AM Peak Hour Raw Count	202	35	427	261	41	42		179	254	146	15	627	132
% Change	6%	6%	5%	8%	5%	5%		6%	6%	6%	0%	0%	0%

12/4/2018

Traffic Count Data Sheet (Demand Adjusted)

Year Counts Taken: 2018 E-W Street: I-25 E. Ramp Speed Limit (I-25 E. Ramp)= 30 MPH
 N-S Street: Jefferson St. Speed Limit (Jefferson St.)= 35 MPH
 11/1/18

Signalized

Begin Time	End Time	Eastbound (I-25 E. Ramp)			Westbound (I-25 E. Ramp)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	459	54	45	0	0	0	0	404	62	42	95	0
7:15 AM	7:30 AM	494	52	36	0	0	0	0	429	60	48	115	0
7:30 AM	7:45 AM	189	64	36	0	0	0	0	170	54	23	126	0
7:45 AM	8:00 AM	215	86	45	1	0	0	0	246	53	35	132	0
8:00 AM	8:15 AM	184	64	49	0	0	0	0	133	51	21	94	0
8:15 AM	8:30 AM	172	90	47	0	0	0	0	133	45	22	112	0
8:30 AM	8:45 AM	459	99	52	0	0	0	0	116	46	35	118	0
8:45 AM	9:00 AM	494	65	44	0	0	0	0	112	39	26	133	0
AM Peak Hour Volumes		760	304	177	1	0	0	0	582	203	101	464	1
Percent Approach		61.2%	24.5%	14.3%	#DIV/0!	#DIV/0!	#DIV/0!	0.0%	77.1%	22.9%	17.9%	82.1%	0.0%

Intersection

AM Peak Hour Factor 0.90 Intersection 0.83 0.74 0.85

Begin Time	End Time	Eastbound (I-25 E. Ramp)			Westbound (I-25 E. Ramp)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	439	145	58	0	0	0	0	402	75	78	185	0
4:15 PM	4:30 PM	123	170	60	0	0	0	0	121	85	75	193	0
4:30 PM	4:45 PM	113	156	54	0	0	0	0	129	96	70	240	0
4:45 PM	5:00 PM	138	150	46	0	0	0	0	113	90	63	219	0
5:00 PM	5:15 PM	106	178	48	0	0	0	0	119	85	93	283	0
5:15 PM	5:30 PM	495	203	43	0	0	0	0	144	96	53	164	0
5:30 PM	5:45 PM	495	195	39	0	0	0	0	104	64	47	159	0
5:45 PM	6:00 PM	498	98	36	0	0	0	0	93	46	46	92	0
PM Peak Hour Volumes		480	654	208	0	0	0	0	482	356	301	935	2
Percent Approach		35.8%	48.7%	15.5%	#DIV/0!	#DIV/0!	#DIV/0!	0.0%	57.5%	42.5%	24.4%	75.6%	0.0%

Intersection

PM Peak Hour Factor 0.95 Intersection 0.94 0.93 0.82

Begin Time	End Time	Eastbound (I-25 E. Ramp)			Westbound (I-25 E. Ramp)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
		L	T	R	L	T	R	L	T	R	L	T	R
AM Peak Hour Raw Count		739	296	171	1	0	0	0	678	202	1	462	0
% Change		3%	3%	4%	0%	N/A	N/A	N/A	1%	0%	0%	0%	N/A
AM Peak Hour Raw Count		461	629	201	0	0	0	0	470	347	0	911	0
% Change		4%	4%	3%	N/A	N/A	N/A	N/A	3%	3%	N/A	3%	N/A

I-25ERamp_Jefferson_CNT_2018_Demand.xlsx

Traffic Count Data Sheet (Demand Adjusted)

Year Counts Taken: 2018 E-W Street: I-25 W. Ramp Speed Limit (I-25 W. Ramp)= 30 MPH
 N-S Street: Jefferson St. Speed Limit (Jefferson St.)= 35 MPH
 11/1/18

Signalized

Begin Time	End Time	Eastbound (I-25 W. Ramp)			Westbound (I-25 W. Ramp)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	0	0	0	52	27	24	76	176	0	0	59	28
7:15 AM	7:30 AM	0	0	0	66	44	25	49	232	0	0	63	42
7:30 AM	7:45 AM	0	0	0	73	74	40	53	279	0	0	79	74
7:45 AM	8:00 AM	0	0	0	72	115	33	83	366	0	0	89	61
8:00 AM	8:15 AM	0	0	0	62	85	27	77	290	0	0	67	53
8:15 AM	8:30 AM	0	0	0	51	49	40	64	229	0	0	80	47
8:30 AM	8:45 AM	0	0	0	76	58	26	74	192	0	0	66	59
8:45 AM	9:00 AM	0	0	0	76	55	43	27	168	0	0	72	72
AM Peak Hour Volumes		0	0	0	258	323	140	277	1164	0	0	315	235
Percent Approach		#DIV/0!	#DIV/0!	#DIV/0!	35.8%	44.8%	19.4%	19.2%	80.8%	0.0%	0.0%	57.3%	42.7%

Intersection

0.83

0.80

0.90

AM Peak Hour Factor

#DIV/0!

0.82

Begin Time	End Time	Eastbound (I-25 W. Ramp)			Westbound (I-25 W. Ramp)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	0	0	0	68	78	26	105	148	0	0	143	125
4:15 PM	4:30 PM	0	0	0	96	107	23	96	135	0	0	199	146
4:30 PM	4:45 PM	0	0	0	65	91	28	89	150	0	0	195	141
4:45 PM	5:00 PM	0	0	0	96	111	19	91	142	0	0	212	169
5:00 PM	5:15 PM	0	0	0	100	149	0	100	149	0	0	235	149
5:15 PM	5:30 PM	0	0	0	101	140	0	103	143	0	0	211	156
5:30 PM	5:45 PM	0	0	0	111	132	0	110	132	0	0	156	117
5:45 PM	6:00 PM	0	0	0	84	86	0	85	94	0	0	79	89
PM Peak Hour Volumes		0	0	0	362	491	47	383	584	0	0	853	615
Percent Approach		#DIV/0!	#DIV/0!	#DIV/0!	40.2%	54.6%	5.2%	39.6%	60.4%	0.0%	0.0%	58.1%	41.9%

Intersection

0.95

0.97

0.96

PM Peak Hour Factor

#DIV/0!

0.90

Begin Time	End Time	Eastbound (I-25 W. Ramp)			Westbound (I-25 W. Ramp)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
		L	T	R	L	T	R	L	T	R	L	T	R
AM Peak Hour Raw Count		0	0	0	252	315	137	277	1162	0	3	315	235
% Change		N/A	N/A	N/A	2%	3%	2%	0%	0%	N/A	0%	0%	0%
AM Peak Hour Raw Count		0	0	0	397	519	19	396	555	0	0	787	571
% Change		N/A	N/A	N/A	-9%	-5%	147%	-3%	5%	N/A	N/A	8%	8%

Traffic Count Data Sheet

Year Counts Taken: 2018 E-W Street: McLeod Blvd. Speed Limit (McLeod Blvd.) = 35 MPH
 N-S Street: Jefferson St. Speed Limit (Jefferson St.) = 35 MPH
 11/1/18

Signalized

Begin Time	End Time	Eastbound (McLeod Blvd.)			Westbound (McLeod Blvd.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	6	6	7	19	9	72	3	86	6	60	84	5
7:15 AM	7:30 AM	2	15	3	24	3	77	4	103	9	44	97	4
7:30 AM	7:45 AM	2	15	6	27	11	123	8	147	9	47	109	12
7:45 AM	8:00 AM	0	10	1	18	6	95	2	106	1	54	82	4
8:00 AM	8:15 AM	2	9	7	29	9	99	4	79	2	43	83	4
8:15 AM	8:30 AM	4	2	4	25	2	79	2	79	6	64	72	9
8:30 AM	8:45 AM	2	9	4	29	5	65	7	76	16	54	94	9
8:45 AM	9:00 AM	3	9	4	19	5	65	9	72	19	63	94	5
AM Peak Hour Volumes		10	46	17	88	29	367	17	442	25	205	372	25
% of Total Traffic		0.6%	2.8%	1.0%	5.4%	1.8%	22.3%	1.0%	26.9%	1.5%	12.5%	22.6%	1.5%
% Directional			4.4%			29.5%			29.5%			36.6%	
AM Peak Hour Factor			0.79			0.75			0.74			0.90	

Begin Time	End Time	Eastbound (McLeod Blvd.)			Westbound (McLeod Blvd.)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	9	11	9	22	4	62	4	107	19	92	129	6
4:15 PM	4:30 PM	7	18	11	28	6	76	3	111	37	103	163	1
4:30 PM	4:45 PM	3	14	5	22	1	86	5	112	20	101	140	2
4:45 PM	5:00 PM	2	16	6	21	4	91	2	113	29	113	178	4
5:00 PM	5:15 PM	1	18	3	31	1	74	0	132	20	84	145	1
5:15 PM	5:30 PM	4	6	2	19	4	75	9	79	17	93	112	9
5:30 PM	5:45 PM	4	5	4	26	6	69	9	71	11	61	49	9
5:45 PM	6:00 PM	4	7	5	11	9	54	2	65	9	56	79	9
PM Peak Hour Volumes		13	66	25	102	12	327	10	468	106	401	626	8
% of Total Traffic		0.6%	3.0%	1.2%	4.7%	0.6%	15.1%	0.5%	21.6%	4.9%	18.5%	28.9%	0.4%
% Directional			4.8%			20.4%			27.0%			47.8%	
PM Peak Hour Factor			0.72		0.95				0.96			0.88	

11/27/2018

Traffic Count Data Sheet

Year Counts Taken: 2018 E-W Street: Outback Drive Speed Limit (Outback Drive)= 25 MPH
 N-S Street: Jefferson St. Speed Limit (Jefferson St.)= 35 MPH
 11/1/18

Unsignalized

Begin Time	End Time	Eastbound (Outback Drive)			Westbound (Outback Drive)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
		L	T	R	L	T	R	L	T	R	L	T	R
7:00 AM	7:15 AM	7	0	0	0	0	0	7	166	0	0	156	0
7:15 AM	7:30 AM	0	0	0	0	0	0	0	192	0	0	137	0
7:30 AM	7:45 AM	0	0	0	0	0	0	2	268	0	0	185	0
7:45 AM	8:00 AM	1	0	0	0	0	0	1	251	0	0	153	3
8:00 AM	8:15 AM	0	0	2	0	0	0	0	186	0	0	135	2
8:15 AM	8:30 AM	0	0	0	0	0	0	3	168	0	1	143	7
8:30 AM	8:45 AM	7	0	7	0	0	0	0	154	0	0	164	4
8:45 AM	9:00 AM	7	0	0	0	0	0	0	147	0	0	154	4
AM Peak Hour Volumes		1	0	2	0	0	0	6	873	0	1	616	12
% of Total Traffic		0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.4%	57.8%	0.0%	0.0%	40.8%	0.8%
% Directional		0.2%			0.0%			58.2%			41.6%		
AM Peak Hour Factor		0.38			Intersection			0.83			0.85		

Begin Time	End Time	Eastbound (Outback Drive)			Westbound (Outback Drive)			Northbound (Jefferson St.)			Southbound (Jefferson St.)		
		L	T	R	L	T	R	L	T	R	L	T	R
4:00 PM	4:15 PM	3	0	0	0	0	0	7	195	0	0	264	2
4:15 PM	4:30 PM	1	0	0	0	0	0	2	199	0	0	229	4
4:30 PM	4:45 PM	1	0	2	0	0	0	4	208	0	0	265	5
4:45 PM	5:00 PM	1	0	8	0	0	0	3	202	0	0	267	9
5:00 PM	5:15 PM	1	0	3	0	0	0	1	211	0	0	266	10
5:15 PM	5:30 PM	3	0	4	0	0	0	0	187	0	0	210	3
5:30 PM	5:45 PM	3	0	4	0	0	0	0	147	0	0	132	7
5:45 PM	6:00 PM	3	0	7	0	0	0	7	125	0	0	127	3
PM Peak Hour Volumes		4	0	13	0	0	0	10	820	0	0	1027	28
% of Total Traffic		0.2%	0.0%	0.7%	0.0%	0.0%	0.0%	0.5%	43.1%	0.0%	0.0%	54.0%	1.5%
% Directional		0.9%			0.0%			43.6%			55.5%		
PM Peak Hour Factor		0.47			Intersection			0.97			0.96		

Outback_Jeff_CNT_2018.xlsx

ABQ RIDE System Map

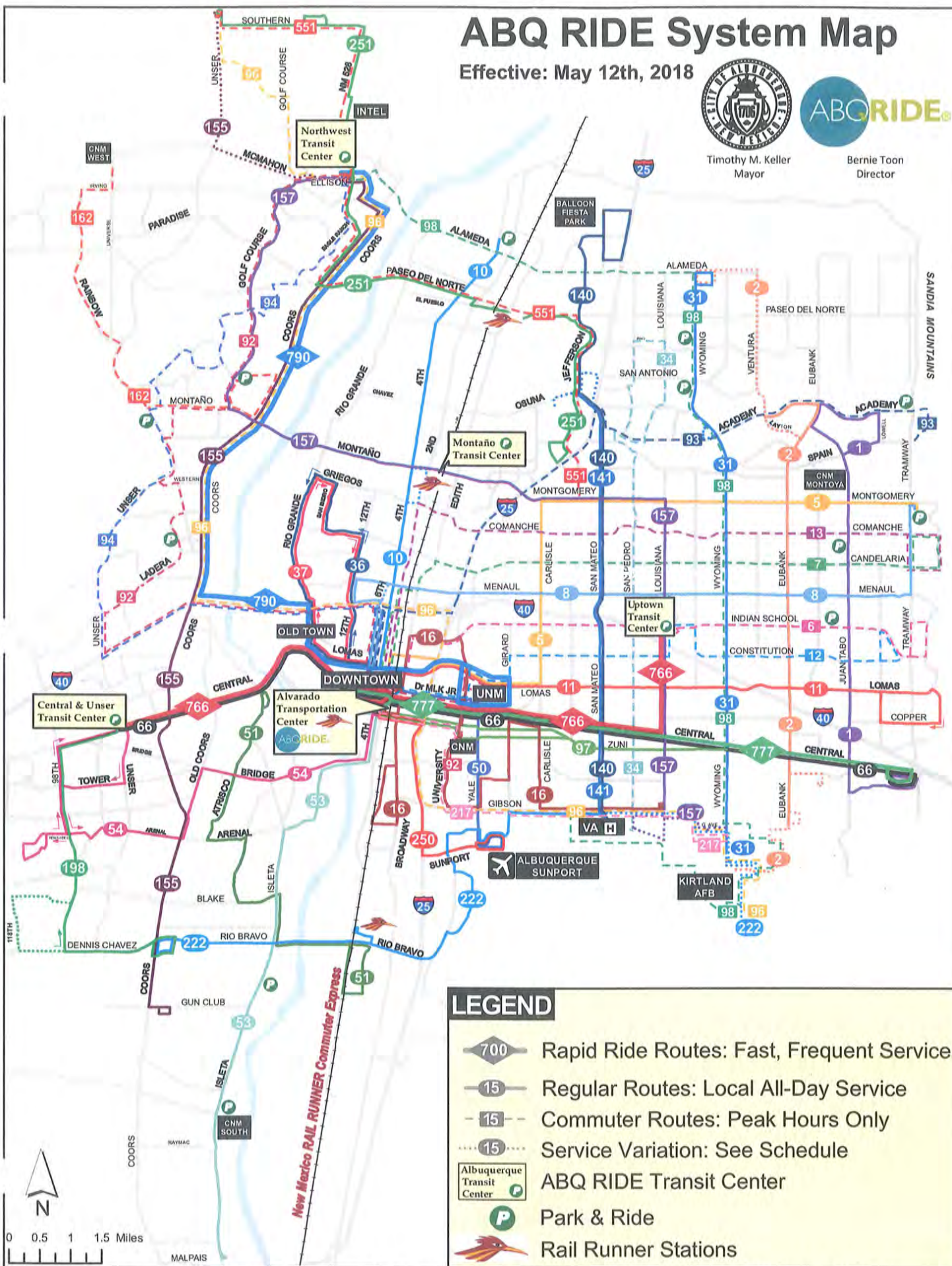
Effective: May 12th, 2018



Timothy M. Keller
Mayor



Bernie Toon
Director



For more detailed information visit www.myabqride.com or call 243-7433 (243-RIDE)

SCOPE OF TRAFFIC IMPACT STUDY (TIS)

TO: Terry Brown

MEETING DATE: August 28, 2018

ATTENDEES: Consultant Team; COA Transportation Development Review; NMDOT

PROJECT: C-Store I-25 and Jefferson St., Zone Atlas # F-17

REQUESTED CITY ACTION: ☐ Zone Change ☐ Site Development Plan

☐ Subdivision ☒ Building Permit ☐ Sector Plan ☐ Sector Plan Amendment

☐ Curb Cut Permit ☐ Conditional Use ☐ Annexation ☐ Site Plan Amendment

ASSOCIATED APPLICATION: New 14 pump (future 28 pump) gas convenience market at SW corner of I-25 and Jefferson St.

SCOPE OF REPORT:

The Traffic Impact Study should follow the standard report format, which is outlined in the DPM. The following supplemental information is provided for the preparation of this specific study.

1. Trip Generation - Use Trip Generation Manual, 10th Edition.
Local data may be used for certain land use types as determined by staff.
Consultant to provide.
2. Appropriate study area:
Signalized Intersections;
 - a. I-25 and Jefferson ramps (all)
 - b. Jefferson and Mcleod
 - c. Jefferson and Singer
Unsignalized Intersections;
 - a. Jefferson and Mclane (private road south of site)
Driveway Intersections: all site drives.
3. Intersection turning movement counts
Study Time – 7-9 a.m. peak hour, 4-6 p.m. peak hour
Consultant to provide for all intersections listed above.
4. Type of intersection progression and factors to be used.
Type III arrival type (see "2016 Highway Capacity Manual" or equivalent as approved by staff). Unless otherwise justified, peak hour factors and % heavy commercial should be taken directly from the MRCOG turning movement data provided or as calculated from current count data by consultant.
5. Boundaries of area to be used for trip distribution.

1.5 mile radius – commercial;

6. Basis for trip distribution.

Residential – Use inverse relationship based upon distance and employment. Use employment data from 2040 Socioeconomic Forecasts, MRCOG – See MRCOG website for most current data.

Office/Industrial - Use inverse relationship based upon distance and population. Use population data from 2040 Socioeconomic Forecasts, MRCOG – See MRCOG website for most current data.

Commercial - Use relationship based upon population. Use population data from 2040 Socioeconomic Forecasts, MRCOG – See MRCOG website for most current data. Take into account pass-by trip, but include strong explanation of reasoning.

Residential - $T_s = (T_t) (Se / D) / (Se / D)$
Ts = Development to Individual Subarea Trips
Tt = Total Trips
Se = Subarea Employment
D = Distance from Development to Subarea

Office/Industrial - $T_s = (T_t) (Sp / D) / (Sp / D)$
Ts = Development to Individual Subarea Trips
Tt = Total Trips
Sp = Subarea Population
D = Distance from Development to Subarea

Commercial -
 $T_s = (T_t) (Sp) / (Sp)$
Ts = Development to Individual Subarea Trips
Tt = Total Trips
Sp = Subarea Population

7. Traffic Assignment. Logical routing on the major street system.

8. Method of intersection capacity analysis - planning or operational (see "2016 Highway Capacity Manual" or equivalent [i.e. HCS, Synchro, Teapac, etc.] as approved by staff). Must use latest version of design software and/or current edition of design manual.

Implementation Year:

9. Traffic conditions for analysis:
- Existing analysis __ yes X no - year ();
 - Phase implementation year(s) without proposed development – 2019
 - Phase implementation year(s) with proposed development – 2019
 - Project completion year without proposed development – 2029
 - Project completion year with proposed development – 2029
 - Other –

10. Background traffic growth.

Method: use 10-year historical growth based on standard data from the MRCOG Traffic Flow Maps. Minimum growth rate to be used is 1/2%.

11. Items to be included in the study:

- a. Intersection analysis.
- b. Signal progression - An analysis is required if the driveway analysis indicates a traffic signal is possibly warranted. Analysis Method:
- c. Arterial LOS analysis;
- d. Recommended street, intersection and signal improvements.
- e. Site design features such as turning lanes, median cuts, queuing requirements and site circulation, including driveway signalization and visibility.
- f. Transportation system impacts.
- g. Other mitigating measures.
- h. Accident analyses ☐ yes ☒ no; Location(s):
- i. Weaving analyses ☐ yes ☒ no; Location(s):

12. Other:

SUBMITTAL REQUIREMENTS:

- 1. Number of copies of report required
 - a. 1 paper copy
 - b. 1 digital copy
- 2. Submittal Fee – \$1300 for up to 3 reviews

The Traffic Impact Study for this development proposal, project name, shall be performed in accordance with the above criteria. If there are any questions regarding the above items, please contact me at 924-3633.

Ernest Armijo, P.E.
Senior Engineer for
Transportation Development Section

8/31/18

Date

via: email
C: TIS Task Force Attendees, file