

Laredo Middle School

Traffic Impact Study

Cherry Creek Schools

Aurora, Colorado

March 24, 2025

Prepared By:



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Laredo Middle School

Traffic Impact Study

1.0 Introduction

Cherry Creek School District is planning to reconstruct Laredo Middle School in the same location that it currently exists. The existing school is close to Laredo Street while the new school will be constructed on the east side of the lot. This will greatly increase the drop-off / pick-up queue storage area. The existing school has an enrollment of approximately 900 students and the new school is expected to have about 900 students, however, the capacity of the new school will be 1,200 students. Figure 1 contains a vicinity map that shows the location of the school south of Smoky Hill Road and east of Laredo Street. The site plan contained in Figure 2 shows that the new school will have two accesses onto Laredo Street. An access on the north side of the site will be for school buses. 10 buses are expected and the site plan shows that the bus loop will accommodate the buses. Parents and staff will use an access on the south side of the site. The student drop-off and pick-up loop will be around the parking area on the west side of the building.

A traffic study scoping meeting was held on February 20, 2025. Minutes from the meeting are contained in Appendix A.

This study has been prepared in conformance with City of Aurora requirements for traffic impact studies¹.

2.0 Study Area

The study area includes the following streets and intersections that surround the school.

- Smoky Hill Road / Laredo Street
- Laredo Street / Buffalo Way
- Laredo Street / Belleview Drive
- Existing school accesses
- New school accesses

Smoky Hill Road is classified as a major arterial street and Laredo Street is classified as a collector street. The classifications are based on the City's 2025 Street Map². The existing laneage and traffic control are contained in Figure 3.

¹ Traffic Impact Study Guidelines. City of Aurora Public Works Department. January 1, 2025.

² 2025 Street Map. City of Aurora. February 16, 2025.

2.1 Study Assumptions

The following assumptions were utilized for this study.

Peak Hours. School begins daily at 8:50 a.m. and ends at 3:45 p.m. Peak hours included in the analysis are the morning peak hour that occurs between 8:00 a.m. and 9:30 a.m., after school peak hour that occurs between 3:00 p.m. and 4:30 p.m., and the evening peak hour that occurs between 4:30 p.m. and 6:00 p.m.

Short-Term Planning Horizon. The development is expected to be completed and occupied in the fall of Year 2027, therefore, Year 2027 is the short-term planning horizon.

Long-Term Planning Horizon. The long-term planning horizon is Year 2050 to coincide with the DRCOG regional plan.

Growth in Background Traffic. An annual growth rate on Smoky Hill Road was determined utilizing data from the Year 2050 DRCOG regional plan. The annual growth rate was estimated to be 0.4%. The Year 2020 volumes and Year 2050 projections provided by DRCOG are contained in Appendix B.

Saturation Flow Rate. The saturation flow rate was assumed to be 1,900 passenger cars / hour / lane which is typical in an urban area.

Improvements to Adjacent Roadways. No capacity improvements were assumed in the analysis.

Peak Hour Factor (PHF). For the existing and the short-term planning horizons, the PHF was based on the data collected for the traffic study. In the long-term horizon, the PHF on Smoky Hill Road was assumed to be 0.92 unless the existing PHF is higher than 0.92. In that case, the existing PHF was used in the analysis of the long-term volumes.

Truck Percentage. Some of the traffic count data collected for the project is summarized in the following table. It shows that there are 2% trucks on both roadways, therefore, the truck percentage was assumed to be 2% for all movements. The traffic count data collected for the project is discussed in Section 3.0.

Truck Percentages on Key Links in the Study Area

Link	Total	Trucks	% Trucks
Smoky Hill Road west of Laredo Street	27,058	458	2%
Laredo Street south of Smoky Hill Road	5,234	104	2%

3.0 Existing Conditions

3.1 Traffic Count Data

Traffic count data were collected for the project on average weekdays in January and February by Sustainable Traffic Solutions. The data were collected when school was in session and weather did not alter normal traffic patterns. The peak hour volumes are summarized in Figures 4 through 6. Existing and future daily volumes are summarized in Table 1. The traffic count data are contained in Appendix C.

3.2 Crash Data

Crash data for the study area intersections were reviewed to understand crash patterns in the intersections. The following table contains a summary of the crashes for Years 2021 through 2023 based on data found on the [CDOT website](#). The data shows that there was a total of 10 crashes at Smoky Hill Road / Laredo Street and one crash at Laredo Street / Belleview Drive. Considering the low number of crashes, there aren't any crash patterns at these intersections. There were no crashes reported at the other study area intersections.

Crash Summary

Intersection	Crash Type	3 Year Total	%	Intersection	Crash Type	3 Year Total	%
S Laredo Street / E Smoky Hill Road	Broadside	1	10%	S Laredo Street / E Belleview Drive	Broadside	0	0%
	Rear End	5	50%		Rear End	1	100%
	Approach Turn	2	20%		Approach Turn	0	0%
	Sideswipe	0	0%		Sideswipe	0	0%
	Fixed Object	2	20%		Fixed Object	0	0%
	Bicycle / Pedestrian	0	0%		Bicycle / Pedestrian	0	0%
	Total	10	---		Total	1	---

4.0 Site Generated Traffic Volumes

4.1 Trip Generation

In order to estimate the traffic impacts associated with this development, the amount of traffic generated by the project was calculated using trip generation rates contained in the Institute of Transportation Engineers Trip Generation manual³ (see Table 2). The trip generation estimate assumes that there will be 900 students in the building when the school opens in Year 2027, and 1,200 students in the building by the Year 2050.

³ Trip Generation, 11th Edition. Institute of Transportation Engineers. September 2021.

4.2 Trip Distribution and Assignment

The trip distribution for the development is contained in Figure 7. It is based on the existing peak hour traffic patterns around the school. The peak hour trip assignments are contained in Figures 8 through 13.

5.0 Signal Warrant Study

A traffic signal warrant study was performed at Laredo Street / new school access based on the requirements contained in the Manual on Uniform Traffic Control Devices⁴ (MUTCD). The following assumptions were used for the analysis.

- **Speed Limit.** The posted speed limit is 30 MPH on Laredo Street.
- **Number of Main-Street Lanes.** Laredo Street has one through lane in each direction.
- **Number of Side-Street Lanes.** One side-street lane was assumed.
- **Main Street Right Turning Traffic.** All of the right turning traffic on Laredo Street was included in the signal warrant.
- **Side-Street Right Turning Traffic.** 50% of the right turning traffic was included in the warrant analysis because some vehicles will be able to turn into gaps in traffic without the aid of a traffic signal.

A traffic signal is expected to be warranted during the morning peak hour in the Year 2027 by Condition A of the peak hour warrant. Condition A is based on the amount of delay on the side-street stop-controlled approach with the highest traffic volumes. In Year 2027, VISTRO calculated 368 seconds per vehicle of delay, and 1,233 seconds per vehicle of delay in the Year 2050. The signal warrant study analysis is contained in Appendix D.

6.0 Traffic Volume Scenarios

The traffic volume scenarios for the Year 2027 and Year 2050 were developed by inflating the existing traffic volumes on Smoky Hill Road using the annual growth rate that is discussed in Section 2.2 and adding the trip assignment for the school. Figures 14 through 19 contain the Year 2027 traffic volume scenarios, and Figures 20 through 25 contain the Year 2050 traffic volume scenarios. The recommended laneage and traffic control following completion of the new school are contained in Figure 26.

6.1 Level of Service Analysis

To evaluate the performance of the intersections within the study area, the level of service (LOS) was calculated using PTV VISTRO software. This software package utilizes criteria described in the Highway Capacity Manual⁵. LOS is a measure used

⁴ Manual on Uniform Traffic Control Devices, 11th Edition. Federal Highway Administration. December 2023.

⁵ Highway Capacity Manual, 7th Edition. National Academy of Sciences, Engineering, and Medicine. 2022.

to describe operational conditions at an intersection. LOS categories ranging from A to F are assigned based on the predicted delay in seconds per vehicle for the intersection as a whole, as well as for individual turning movements. LOS A indicates very good operations, and LOS F indicates poor, congested operations. In Aurora, acceptable intersection operation is LOS D, or better. The analysis is summarized in Table 3 and the following sections discuss the operation of the study area intersections. The VISTRO analysis results are contained in Appendix E.

Signalized Intersections

1 – Smoky Hill Road / Laredo Street. This intersection is currently operating at LOS A through LOS C, and is expected to continue operating at these levels of service through the Year 2050 total traffic volume scenarios.

2 – Laredo Street / Buffalo Way. This intersection is currently operating at LOS A and LOS B, and is expected to continue operating at these levels of service through the Year 2050 total traffic volume scenarios.

7 – Laredo Street / School Access (New School). This new signalized intersection is expected to operate at LOS A and LOS B in the total traffic volume condition.

Side-Street Stop-Controlled Intersections

The level of service for intersections with side-street stop-control is determined by the movement with the highest delay value which is typically the side-street left turning movement. It is not unusual for these intersections to operate poorly on arterial corridors.

3 – Laredo Street / North Parking Lot Access. This intersection is currently operating between LOS E during the morning peak hour and LOS B during the evening peak hour. When the new school is constructed, this intersection will provide access to the school bus loop and a small parking lot. In the total traffic volume conditions, it is expected to operate between LOS A and LOS D.

4 – Laredo Street / School Exit. This intersection is currently operating between LOS E during the morning peak hour and LOS A during the evening peak hour. When the new school is constructed, this intersection will be eliminated.

5 – Laredo Street / School Entrance (Existing School). This access functions as inbound only during school hours. When the new school is constructed, this intersection will be eliminated.

6 – Laredo Street / Belleview Drive. This intersection currently operates at LOS B and LOS C. In the Year 2050 total traffic volume scenarios, it is projected to operate between LOS D during the morning peak hour and LOS B during the evening peak hour.

7 – Laredo Street / School Access (New School). As a side-street stop-controlled intersection, it is expected to operate between LOS F and LOS B. During the

morning peak hour, the intersection is operating at LOS F with delays on the side-street approach that are expected to extend into the drop-off / pick-up loop that will clog the loop and back traffic onto Laredo Street.

7.0 95th Percentile Queues for Turning Movements Impacted by the School

The 95th percentile queues for turning movements that will be impacted by the construction of the new school are summarized in Table 4. VISTRO calculates queue lengths using algorithms found in the Highway Capacity Manual. The following conclusions can be drawn from the information in the table.

- **Westbound Left Turn from Smoky Hill Road to Laredo Street.** The 95th percentile queues are not expected to exceed the length of this turn bay.
- **Southbound Left Turn from Laredo Street into the New School Access.** The 95th percentile queues are not expected to exceed the length of this turn bay. Queues contained in the table for the morning peak hour assuming that the intersection has side-street stop-control will be longer than reported because the queues for the westbound left turn movement are expected to extend into the drop-off / pick-up lane. That will cause traffic to back onto Laredo Street which will result in longer queues for this movement. However, signalizing this intersection will mitigate the queues with proper signal timing.
- **Westbound Left and Right Turn Lanes from the School Access onto Laredo Street.** As mentioned in the previous bullet, if this intersection has side-street stop-control, the left turn queue in the morning peak hour is expected to exceed the storage area and back into the drop-off / pick-up lane resulting in traffic queuing onto Laredo Street.

8.0 Conclusions

STS has drawn the following conclusions based on the analysis performed for this project.

Signalization of the School Access. A traffic signal is expected to be warranted at the school access during the morning peak hour in the Year 2027 by Condition A of the peak hour warrant. Condition A is based on the amount of delay on the side-street stop-controlled approach with the highest traffic volumes. In Year 2027, VISTRO calculated 368 seconds per vehicle of delay, and 1,233 seconds per vehicle of delay in the Year 2050.

Intersection Operation. The operation of the intersections was analyzed using PTV VISTRO software. Following the opening of the new school, all of the intersections are expected to operate at acceptable levels of service. This assumes that the school access is signalized. If it has side-street-stop control, it is expected to operate at LOS F during the morning peak hour.

95th Percentile Queues for Turning Movements Impacted by the School. The queues were evaluated for the following movements.

- **Westbound Left Turn from Smokey Hill Road onto Laredo Street.** The 95th percentile queues are not expected to exceed the length of this turn bay.
- **Southbound Left Turn from Laredo Street into the School.** The 95th percentile queues are not expected to exceed the length of this turn bay.
- **Westbound Left and Right Turn Lanes from the School Access onto Laredo Street.** If this intersection has side-street stop-control, the left turn queue in the morning peak hour is expected to exceed the storage area and back into the drop-off / pick-up lane resulting in traffic queuing onto Laredo Street. Signalizing the intersection will minimize the queue lengths.

Tables

Table 1 – Existing and Projected Daily Volumes on Key Links in the Study Area

Table 2 – Trip Generation Estimate

Table 3 – Intersection Operational Summary

Table 4 – 95th Percentile Queues for Turning Movements Impacted by the School

Table 1. Existing and Projected Daily Volumes on Key Links in the Study Area

Link	Year 2025	Year 2027 Background	Year 2027 Total	Additional 300 Students	Year 2050 Background	Year 2050 Total
Smoky Hill Road west of Laredo Street	27,058	27,300	27,300	190	30,010	30,200
Smoky Hill Road east of Laredo Street	28,018	28,270	28,270	190	31,080	31,270
Laredo Street south of Smoky Hill Road	5,234	5,230	5,230	380	5,230	5,610
Laredo Street north of Laredo Middle School	2,600	2,600	2,600	380	2,600	2,980
Laredo Street south of Laredo Middle School	2,440	2,440	2,440	250	2,440	2,690

Note

1. The Year 2025 traffic volumes collected in the field are highlighted in yellow. Other Year 2025 volumes were estimated based on the peak hour to daily ratio for the evening peak hour.

Table 2. Trip Generation Estimate

Land Use	ITE Code ¹	Size	Unit	Average Daily Trips				Morning Peak Hour Trips				After School Peak Hour Trips ²				Evening Peak Hour Trips			
				Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out
Year 2027																			
Middle School	522	900	Students	2.1	1,890	945	945	0.67	603	326	277	0.36	340	156	184	0.15	135	65	70
Year 2050																			
Middle School	522	1,200	Students	2.1	2,520	1,260	1,260	0.67	804	434	370	0.36	454	209	245	0.15	180	86	94
Additional Traffic in Year 2050	---	300	Students	---	630	315	315	---	201	108	93	---	144	83	61	---	45	21	24

Notes:

1. The trip generation estimate is based on rates contained in [Trip Generation, 11th Edition](#) (Institute of Transportation Engineers, September 2021).
2. The after school peak is based on the PM peak hour of generator.

Table 3. Intersection Operational Summary

Signalized Intersections ¹	Year 2025						Year 2027 Background						Year 2027 Total						Year 2050 Background						Year 2050 Total					
	Morning		After School		Evening		Morning		After School		Evening		Morning		After School		Evening		Morning		After School		Evening		Morning		After School		Evening	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1 - Smoky Hill Road / Laredo Street	14.6	B	21.8	C	7.9	A	8.7	A	17.0	B	7.3	A	12.6	B	21.4	C	8.2	A	9.1	A	17.1	B	7.8	A	13.7	B	23.7	C	9.2	A
2 - Laredo Street / Buffalo Way	19.0	B	19.9	B	5.0	A	26.4	C	20.8	C	5.8	A	20.1	C	19.7	B	4.9	A	26.4	C	20.8	C	5.8	A	18.8	B	19.7	B	4.7	A
7 - Laredo Street / School Access (New School)	---						---						14.5	B	11.0	B	14.1	B	---						16.4	B	9.1	A	6.3	A
Stop-Controlled Intersections ²	Year 2025						Year 2027 Background						Year 2027 Total						Year 2050 Background						Year 2050 Total					
	Morning		After School		Evening		Morning		After School		Evening		Morning		After School		Evening		Morning		After School		Evening		Morning		After School		Evening	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
3 - Laredo Street / North Parking Lot	40.6	E	23.5	C	10.5	B	0.0	A	0.0	A	0.0	A	23.2	C	19.2	C	0.0	A	0.0	A	0.0	A	0.0	A	29.2	D	22.9	C	0.0	A
	WBLT		WBLT		WBLT		---		---		---		WBLT		WBLT				---		---		---		WBLT		WBLT		---	
4 - Laredo Street / School Exit	35.8	E	21.5	C	9.9	A	0.0	A	0.0	A	0.0	A	---						0.0	A	0.0	A	0.0	A	---					
	WBLT		WBLT		WBLT		---		---		---								---		---		---							
5 - Laredo Street / School Entrance (Existing School)	10.8	B	7.9	A	7.5	A	0.0	A	0.0	A	0.0	A	---						0.0	A	0.0	A	0.0	A	---					
	SBLT		SBLT		SBLT		---		---		---								---		---									
6 - Laredo Street / Belleview Drive	21.8	C	14.3	B	10.4	B	13.5	B	11.8	B	10.0	A	21.2	C	14.6	B	21.3	C	13.5	B	11.8	B	10.0	A	25.1	D	16.0	C	10.7	B
	WBLT		WBLT		WBLT		WBLT		WBLT						WBLT		WBLT		WBLT		WBLT				WBLT		WBLT		WBLT	
7 - Laredo Street / School Access (New School)	---						---						367.7	F	25.9	D	11.3	B	---						1,233.0	F	67.5	F	12.1	B
													WBLT		WBLT		WBLT										WBLT		WBLT	

Notes

1. The level of service for signalized intersections is based on the delay for the entire intersection.

2. The level of service for intersections with side-street stop-control is determined by the movement with the highest delay value.

Table 4. 95th Percentile Queues for Turning Movements Impacted by the School

Movement	Queue Storage	Year 2027 Total Traffic			Year 2050 Total Traffic		
		Morning	After School	Evening	Morning	After School	Evening
Smoky Hill Road / Laredo Street							
Westbound Left Turn	300'	64'	95'	20'	86'	125'	25'
Laredo Street / New School Access							
Southbound Left Turn (Side-Street Stop Control)	450'	31'	9'	3'	52'	15'	4'
Southbound Left Turn (Signalized)		33'	4'	4'	62'	10'	1'
Westbound Left Turn (Side-Street Stop Control)	340'	396'	59'	7'	753'	163'	12'
Westbound Left Turn (Signalized)		110'	26'	75'	170'	50'	13'
Westbound Right Turn (Side-Street Stop Control)		131'	34'	7'	309'	55'	11'
Westbound Right Turn (Signalized)		79'	18'	54'	122'	35'	9'

Note

1. The southbound left turn movement from Laredo Street into the new school access is assumed to be free flowing. However, the westbound queues during the morning peak hour will back into the drop-off / pick-up lane when the intersection has side-street stop control. Therefore, the queues will be longer than calculated by VISTRO.

Figures

Figure 1 – Vicinity Map

Figure 2 – Site Plan

Figure 3 – Laneage and Traffic Control – Existing

Figure 4 – Existing Traffic Volumes – Morning Peak Hour

Figure 5 – Existing Traffic Volumes – After School Peak Hour

Figure 6 – Existing Traffic Volumes – Evening Peak Hour

Figure 7 – Trip Distribution

Figure 8 – Trip Assignment – Year 2027 Morning Peak Hour

Figure 9 – Trip Assignment – Year 2027 After School Peak Hour

Figure 10 – Trip Assignment – Year 2027 Evening Peak Hour

Figure 11 – Trip Assignment – Year 2050 Morning Peak Hour

Figure 12 – Trip Assignment – Year 2050 After School Peak Hour

Figure 13 – Trip Assignment – Year 2050 Evening Peak Hour

Figure 14 – Year 2027 Background Traffic Volumes – Morning Peak Hour

Figure 15 – Year 2027 Background Traffic Volumes – After School Peak Hour

Figure 16 – Year 2027 Background Traffic Volumes – Evening Peak Hour

Figure 17 – Year 2027 Total Traffic Volumes – Morning Peak Hour

Figure 18 – Year 2027 Total Traffic Volumes – After School Peak Hour

Figure 19 – Year 2027 Total Traffic Volumes – Evening Peak Hour

Figure 20 – Year 2050 Background Traffic Volumes – Morning Peak Hour

Figure 21 – Year 2050 Background Traffic Volumes – After School Peak Hour

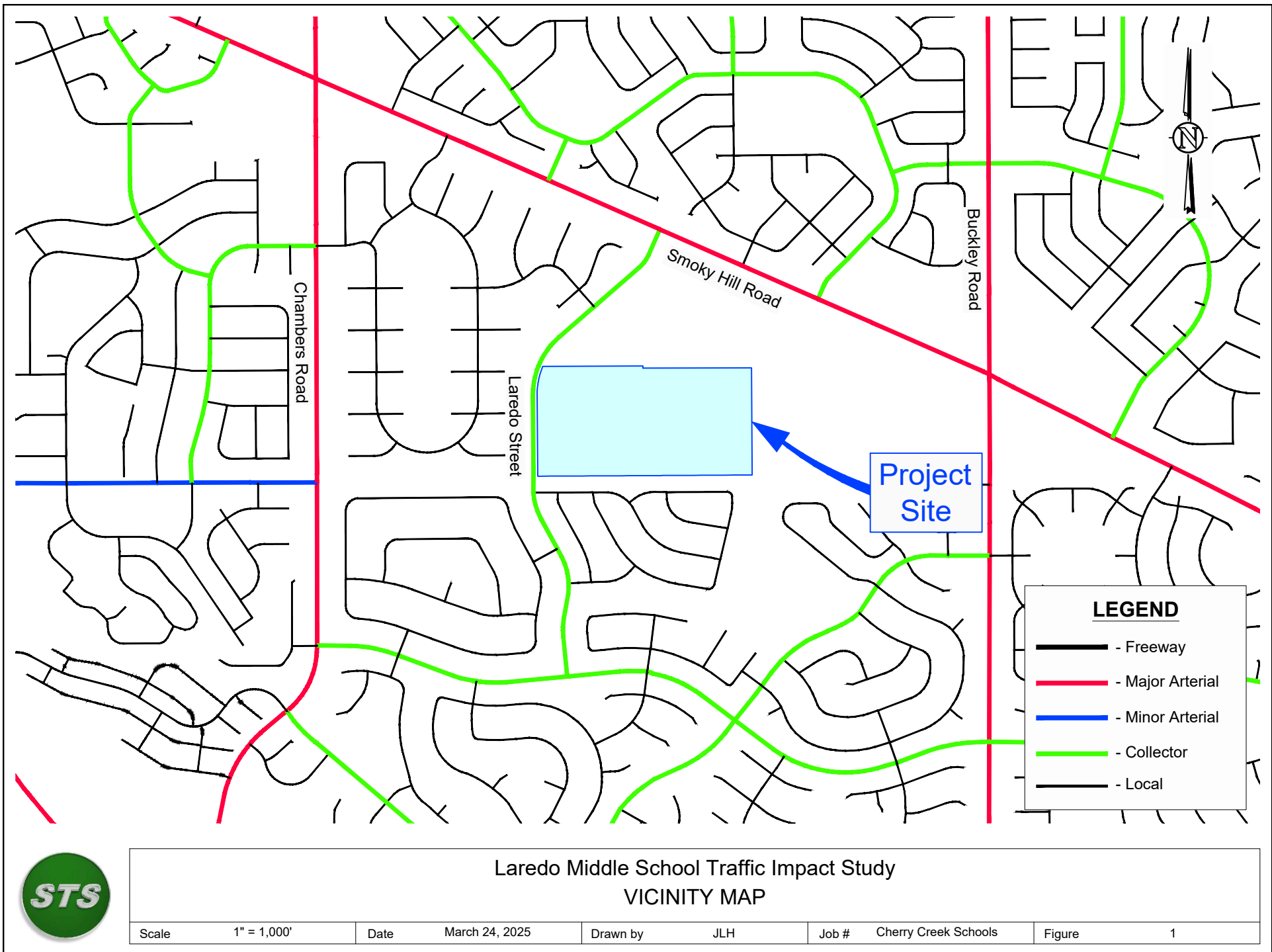
Figure 22 – Year 2050 Background Traffic Volumes – Evening Peak Hour

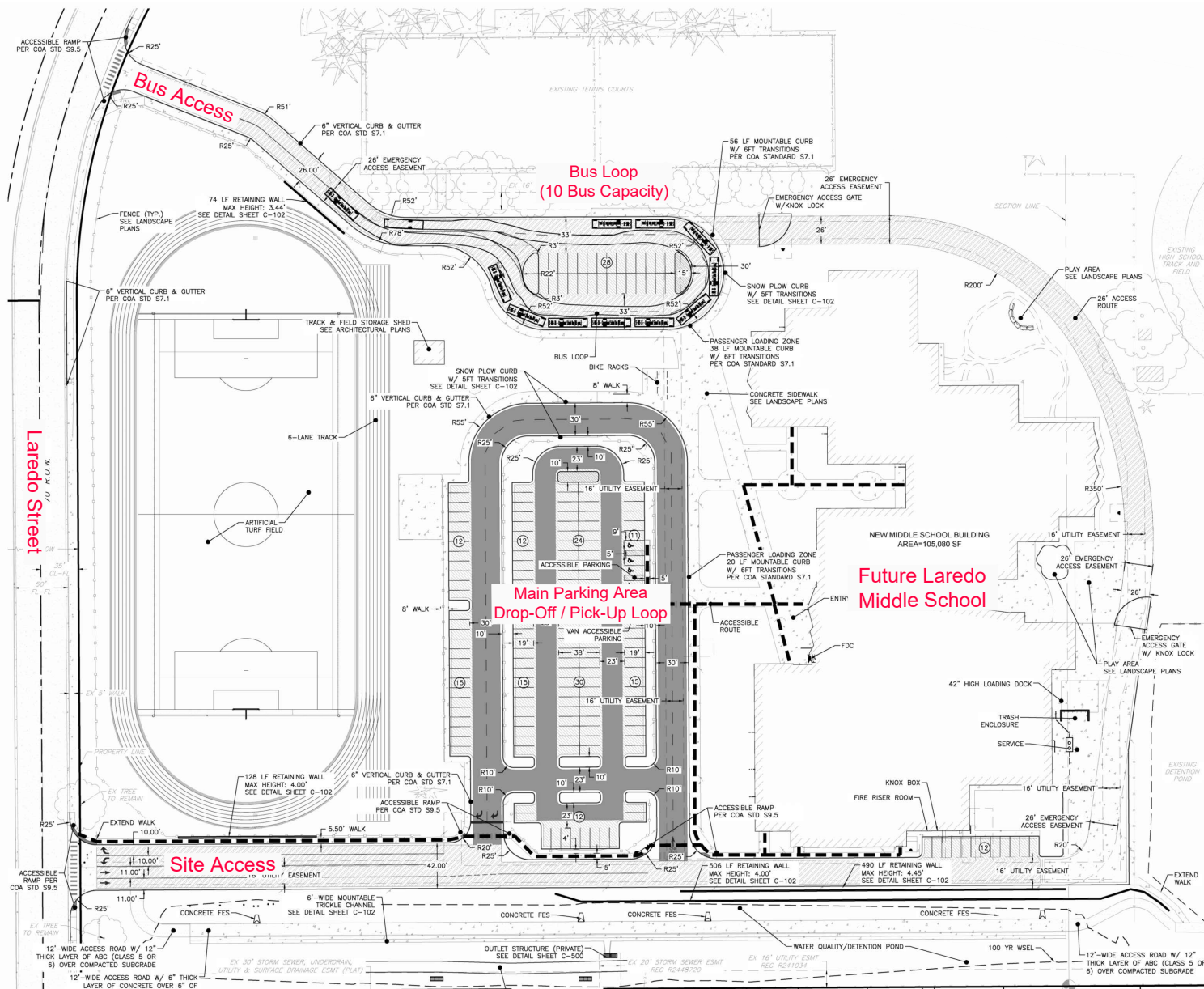
Figure 23 – Year 2050 Total Traffic Volumes – Morning Peak Hour

Figure 24 – Year 2050 Total Traffic Volumes – After School Peak Hour

Figure 25 – Year 2050 Total Traffic Volumes – Evening Peak Hour

Figure 26 – Laneage and Traffic Control – Year 2027 Total Traffic Volumes





Laredo Middle School Traffic Impact Study SITE PLAN

Scale	NTS	Date	March 24, 2025	Drawn by	JLH	Job #	Cherry Creek Schools	Figure	2
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Figure 3 – Laneage and Traffic Control – Existing

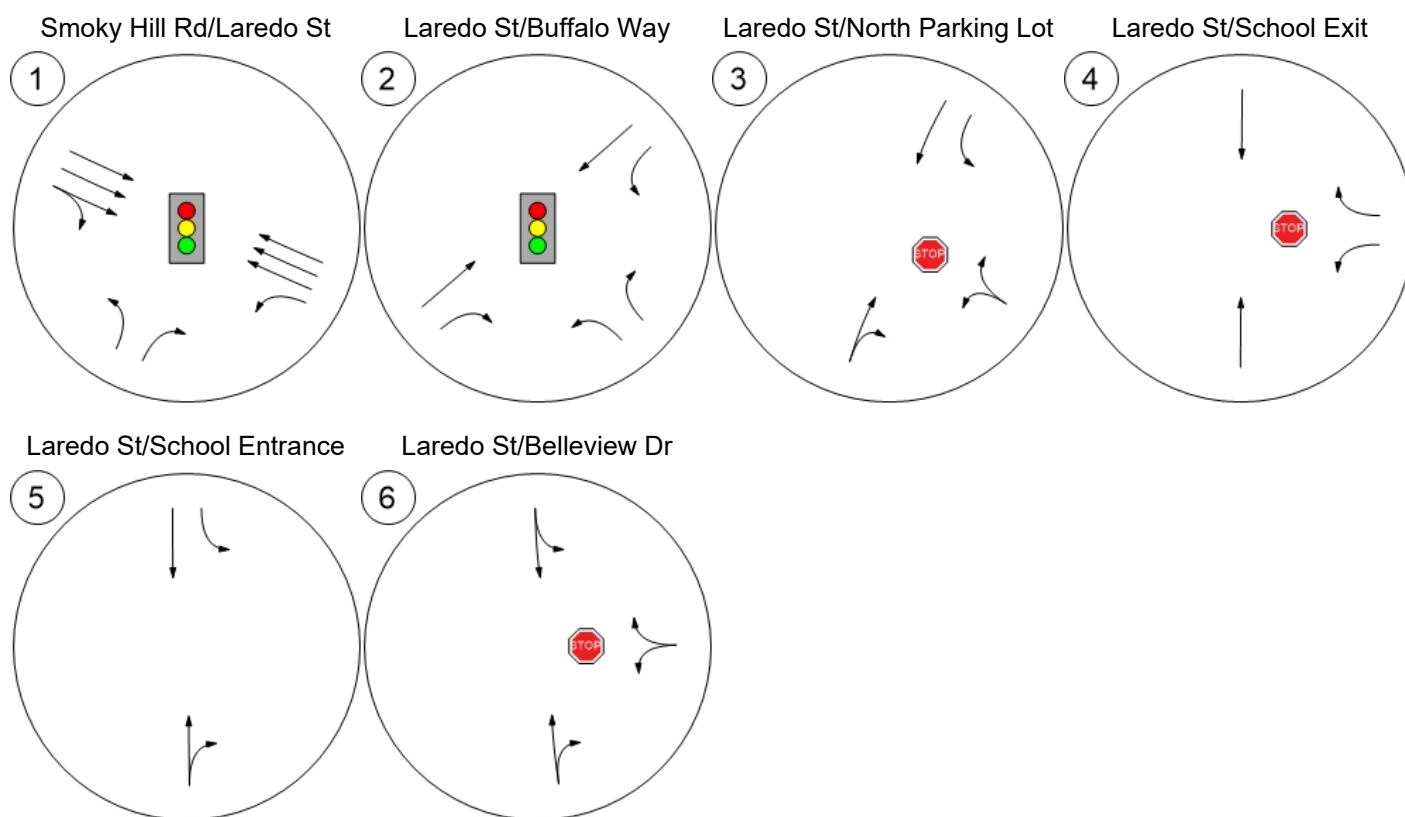


Figure 4 – Existing Traffic Volumes – Morning Peak Hour

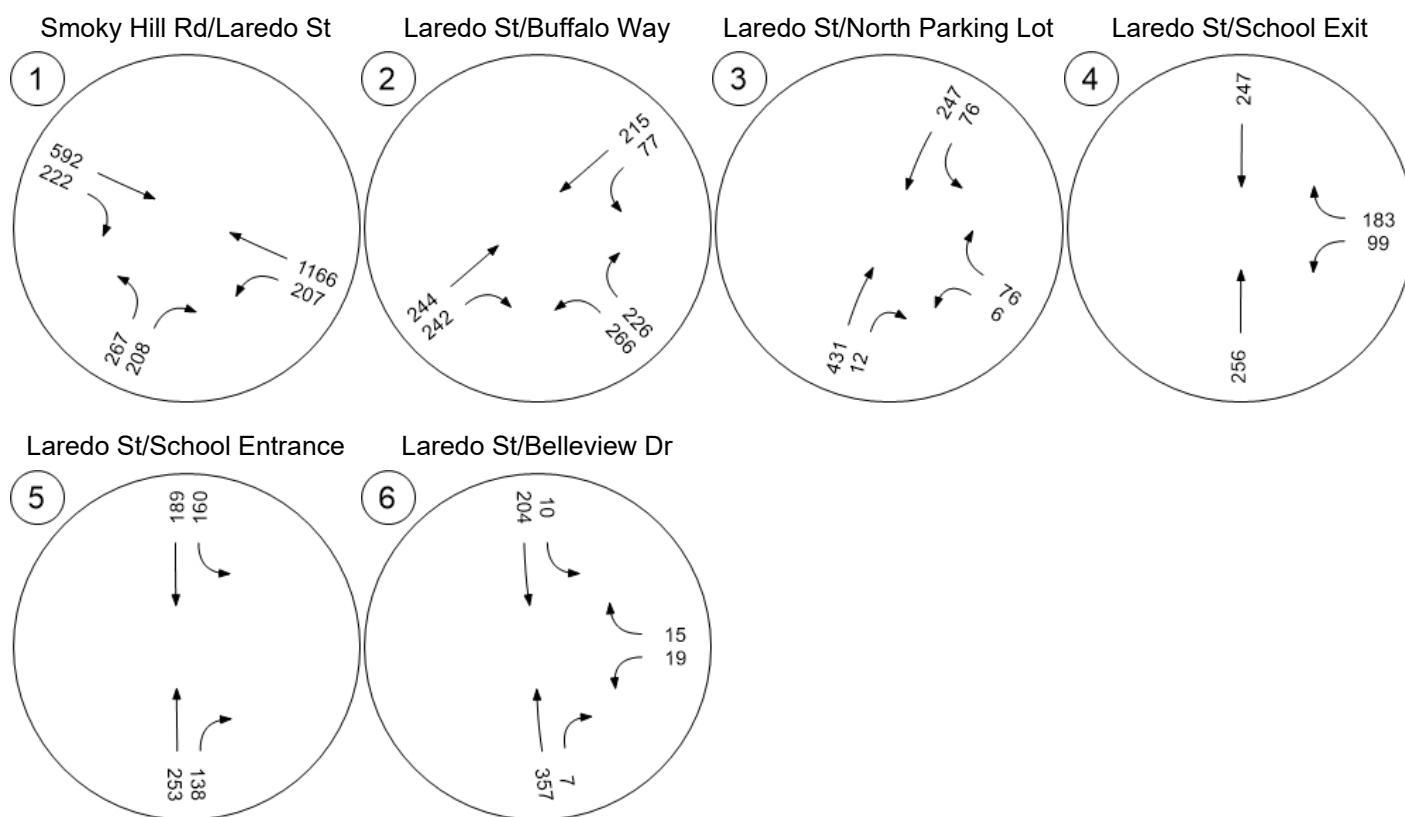


Figure 5 – Existing Traffic Volumes – After School Peak Hour

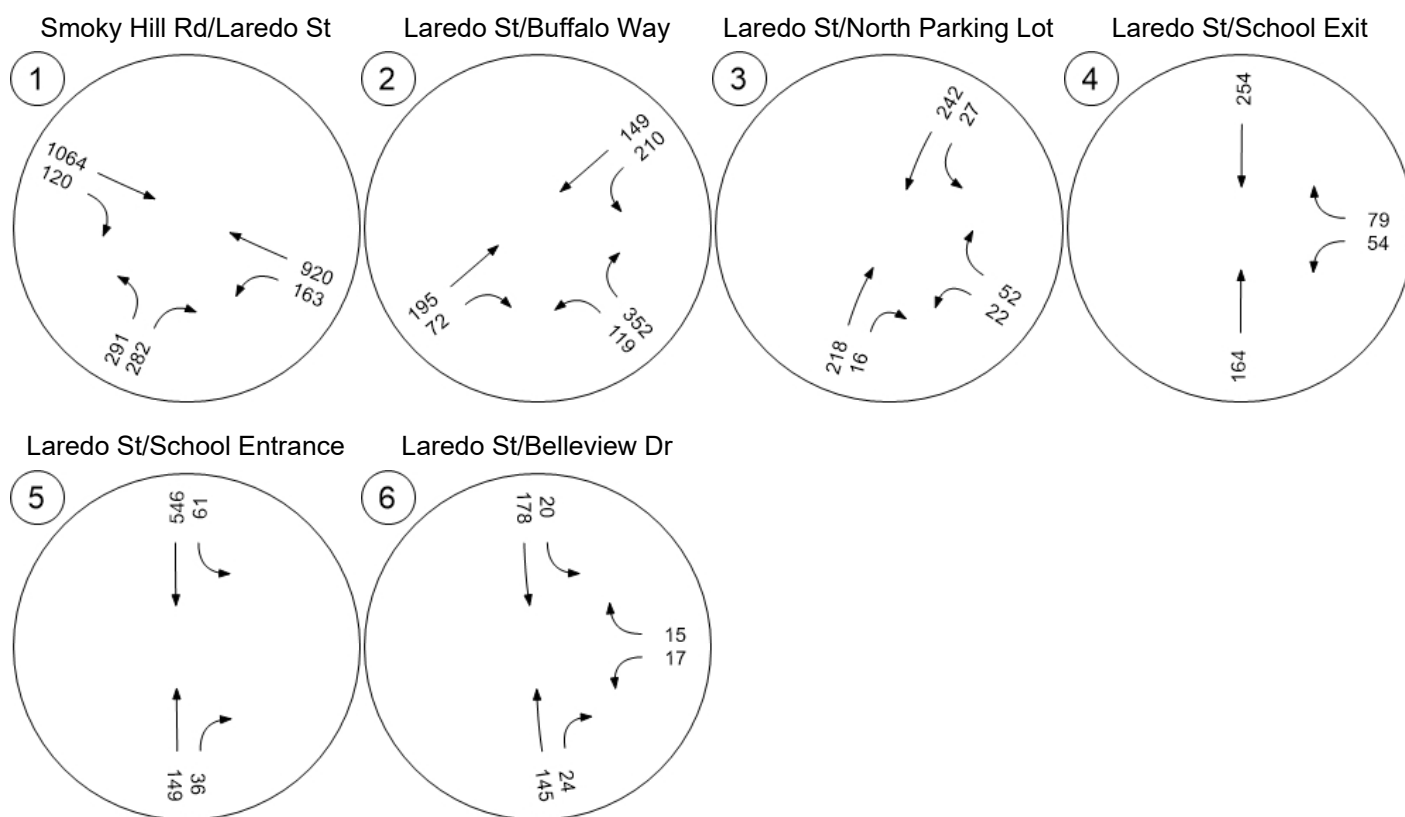
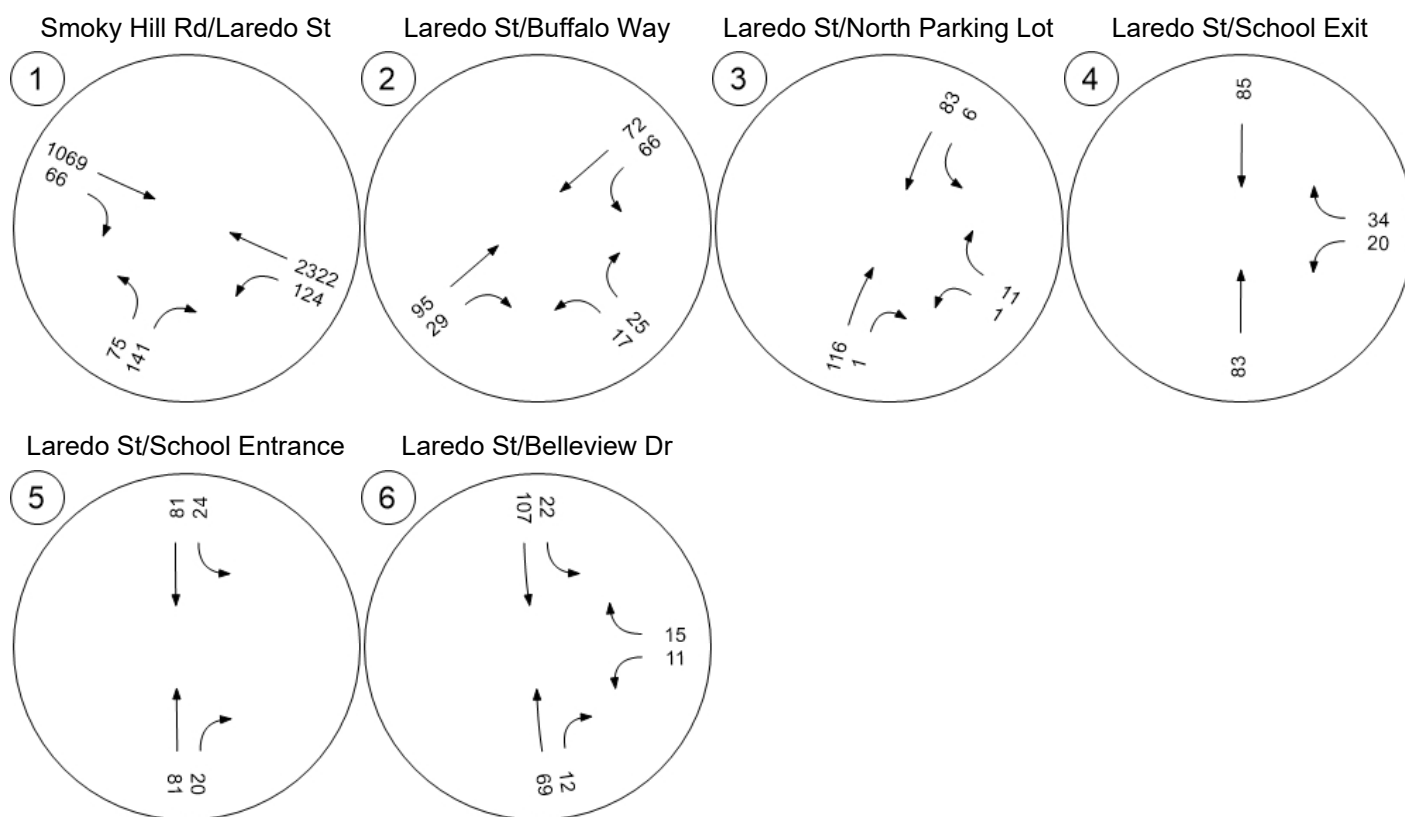


Figure 6 – Existing Traffic Volumes – Evening Peak Hour



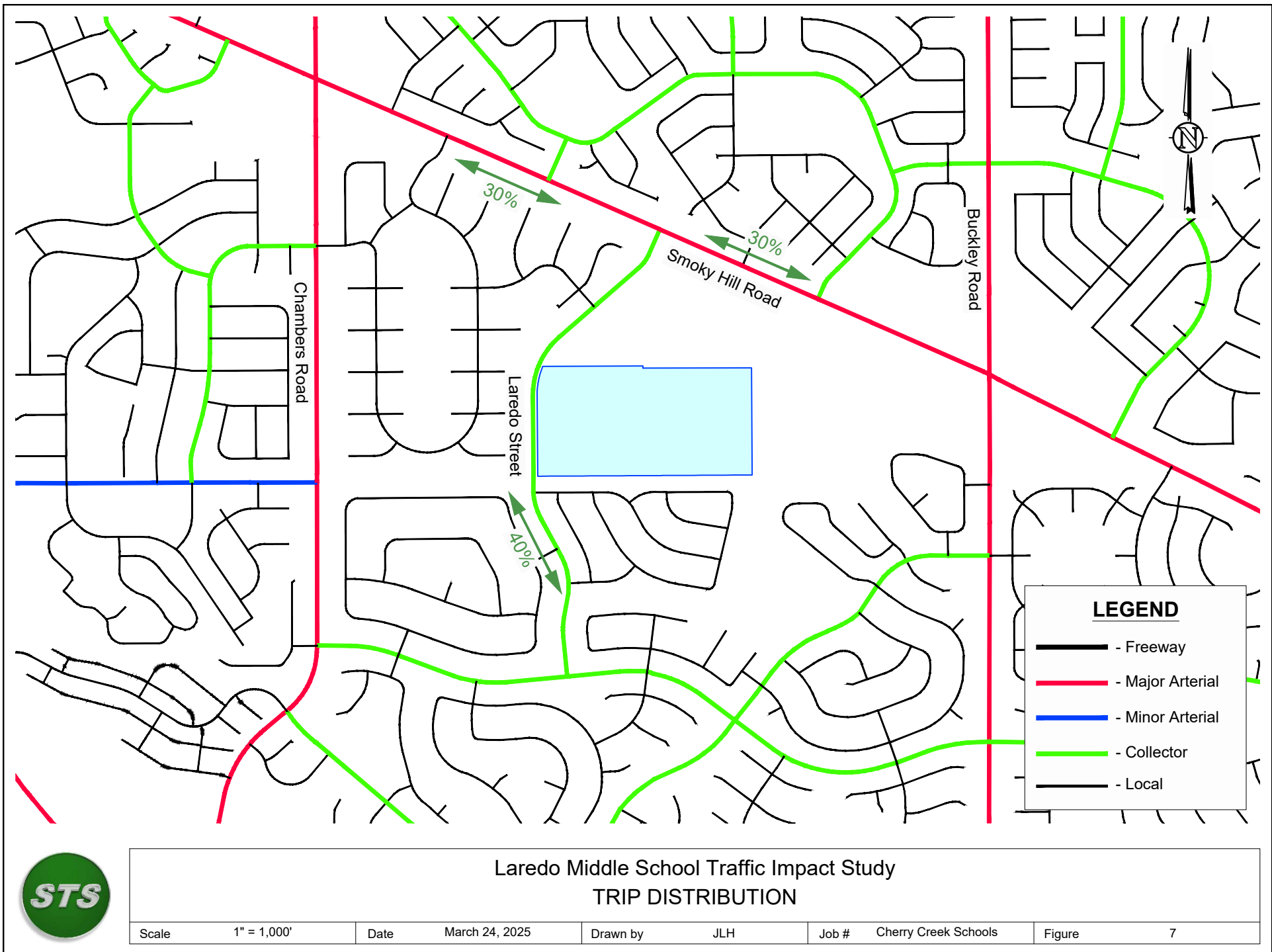


Figure 8 – Trip Assignment – Year 2027 Morning Peak Hour

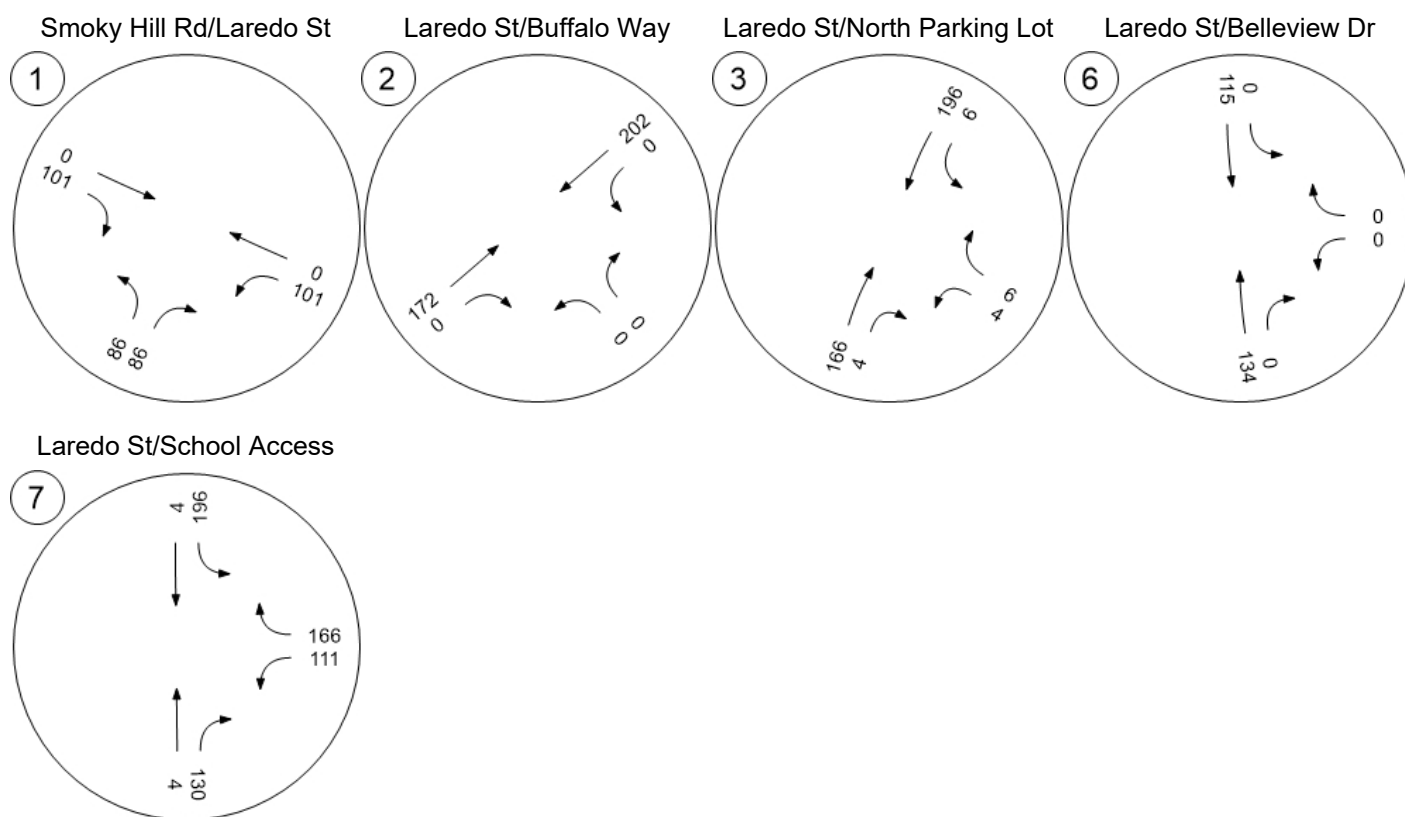


Figure 9 – Trip Assignment – Year 2027 After School Peak Hour

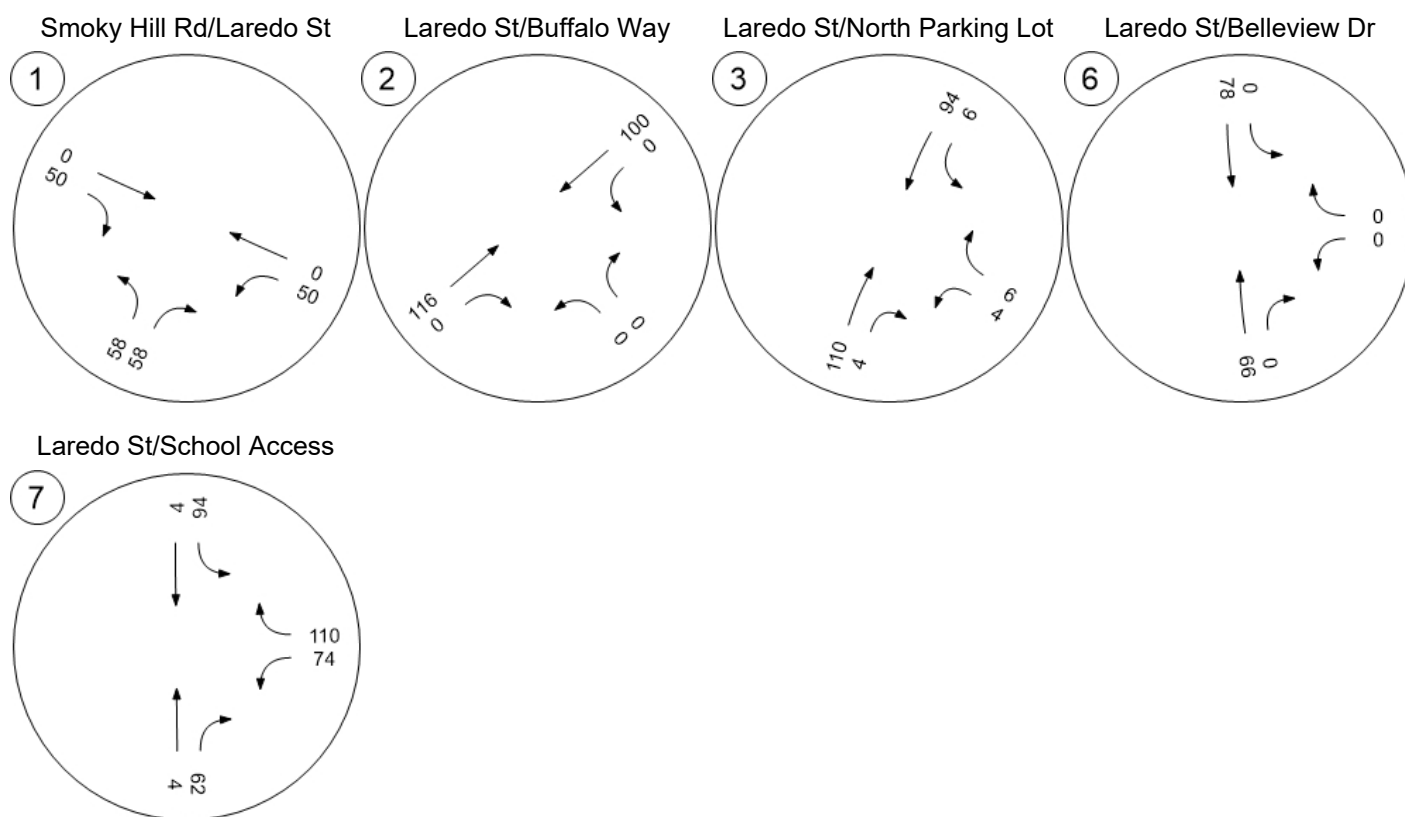


Figure 10 – Trip Assignment – Year 2027 Evening Peak Hour

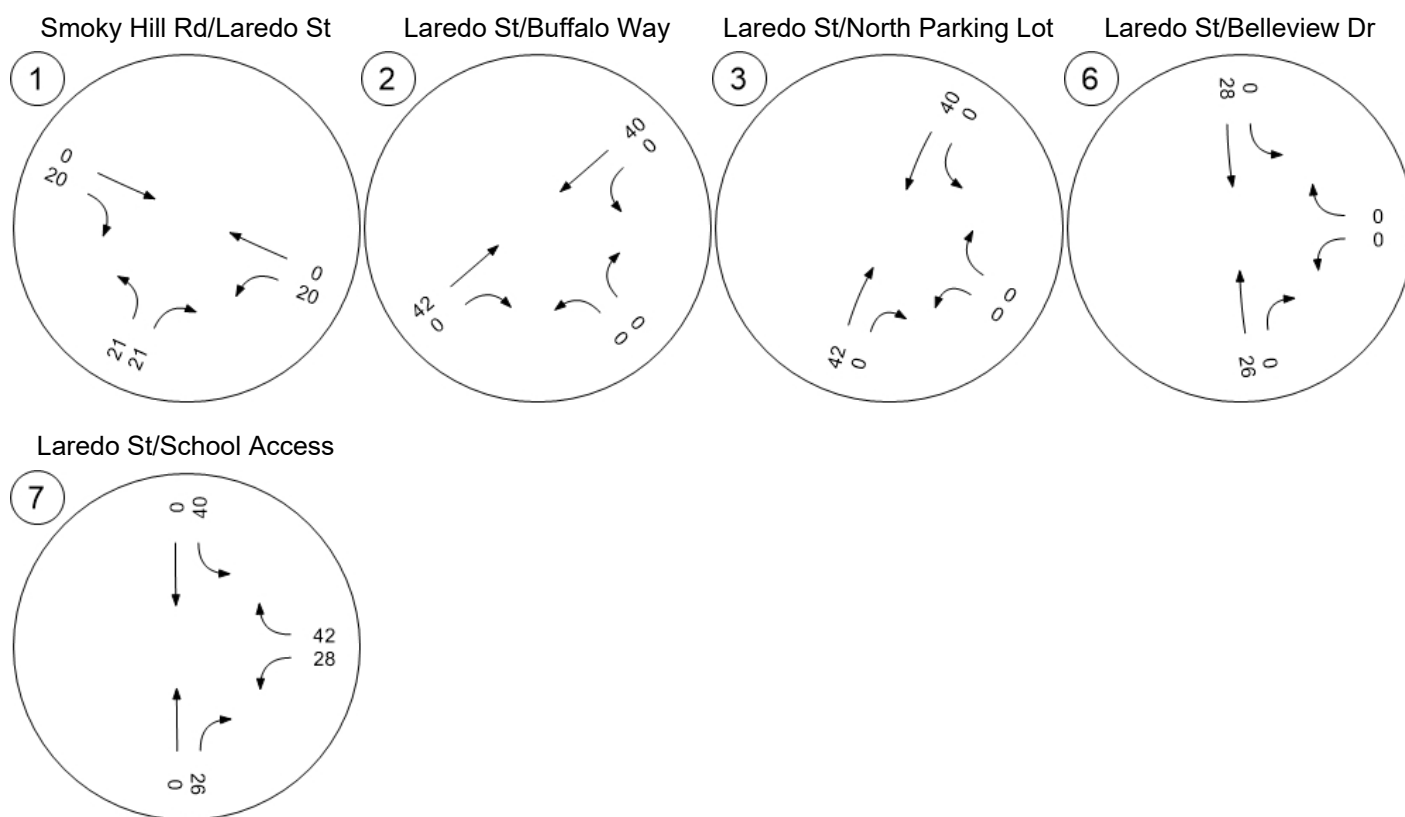


Figure 11 – Trip Assignment – Year 2050 Morning Peak Hour

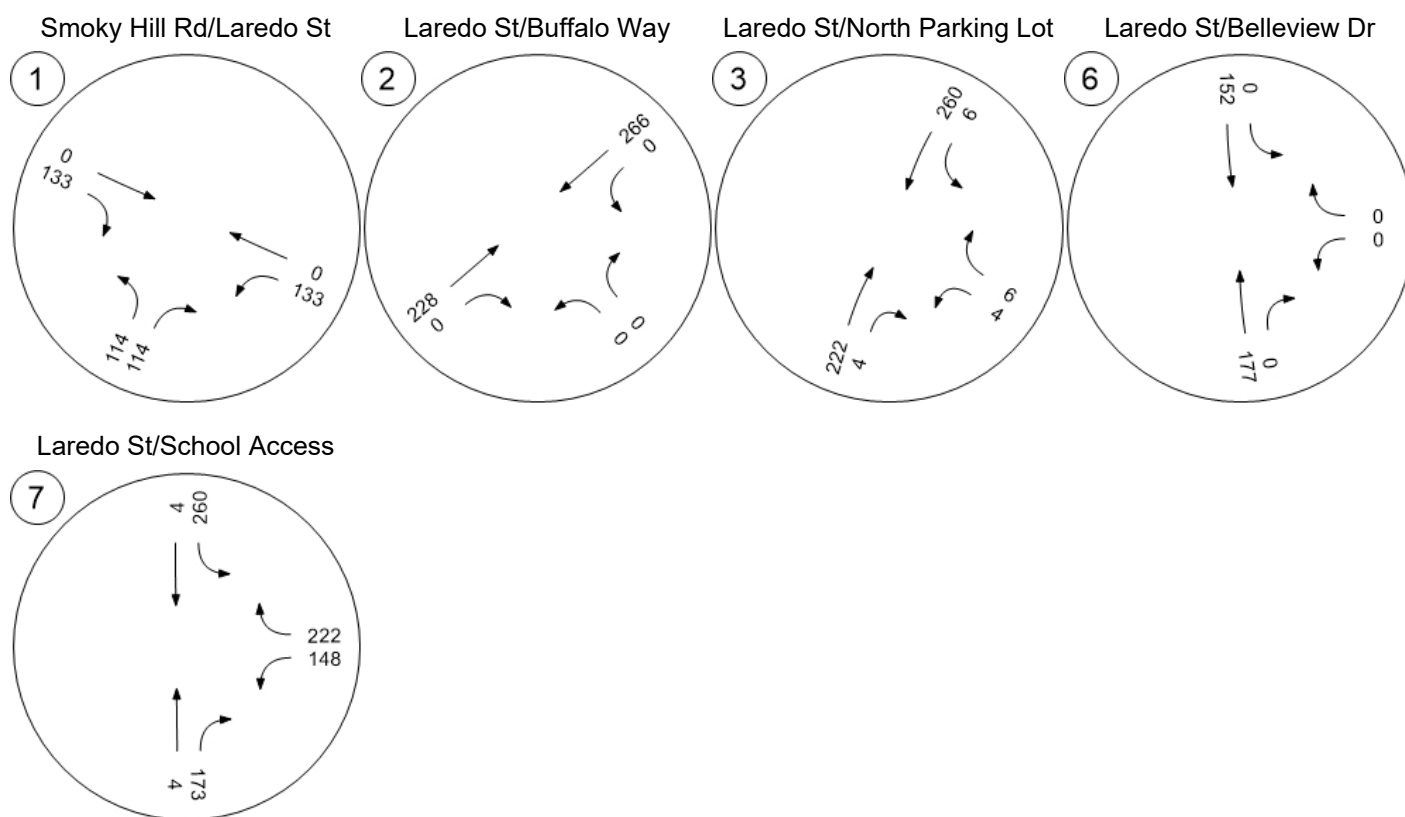


Figure 12 – Trip Assignment – Year 2050 After School Peak Hour

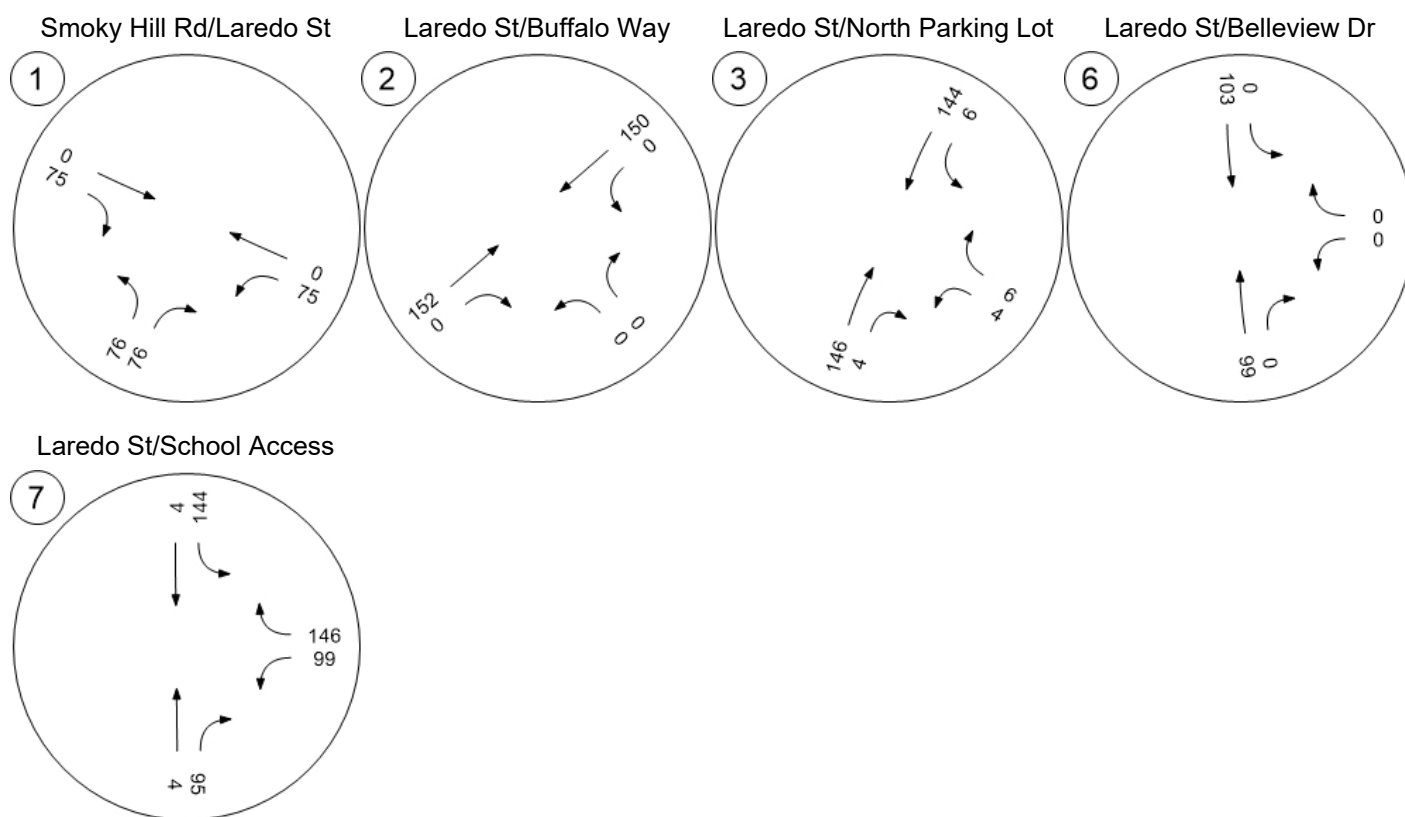


Figure 13 – Trip Assignment – Year 2050 Evening Peak Hour

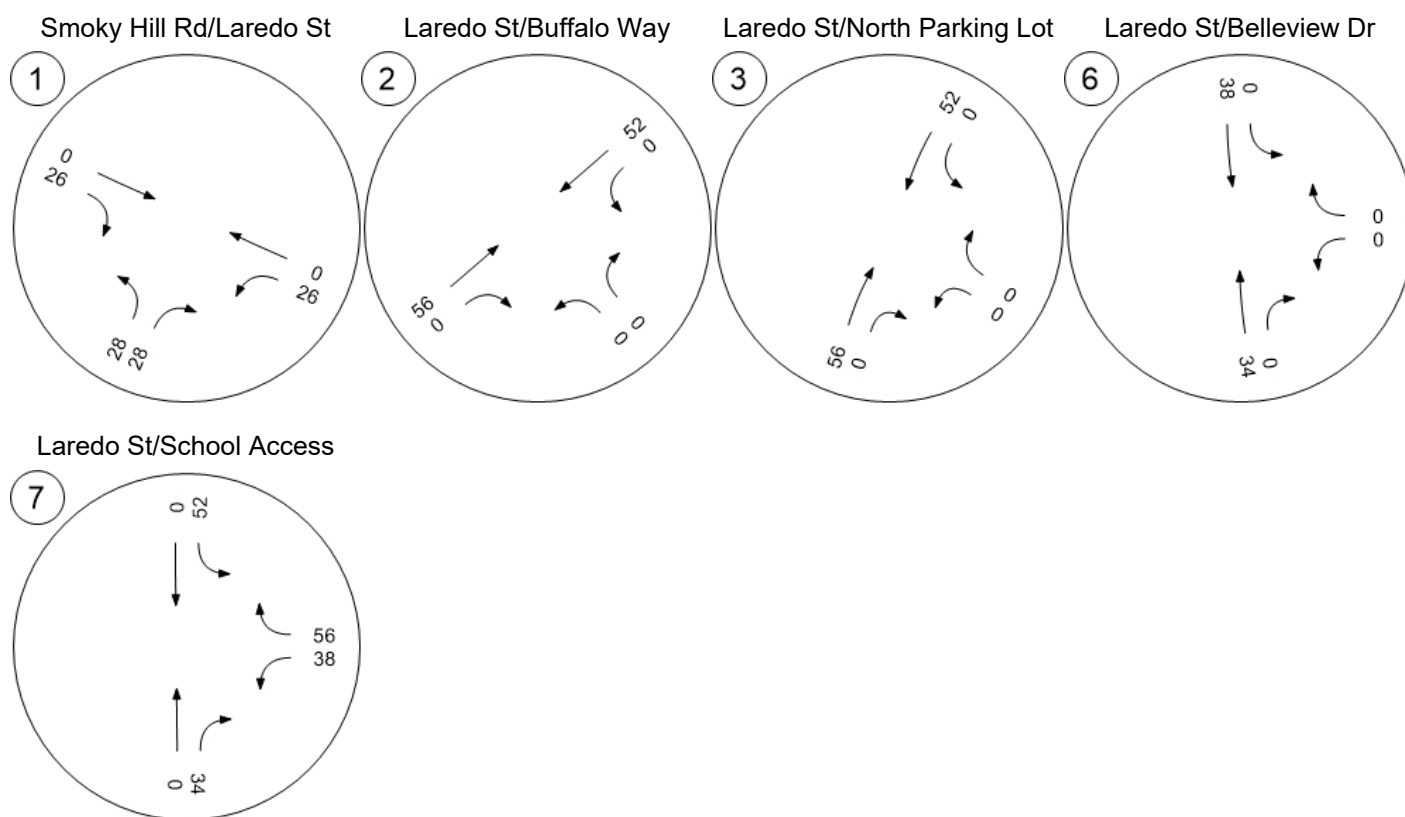


Figure 14 – Year 2027 Background Traffic Volumes – Morning Peak Hour

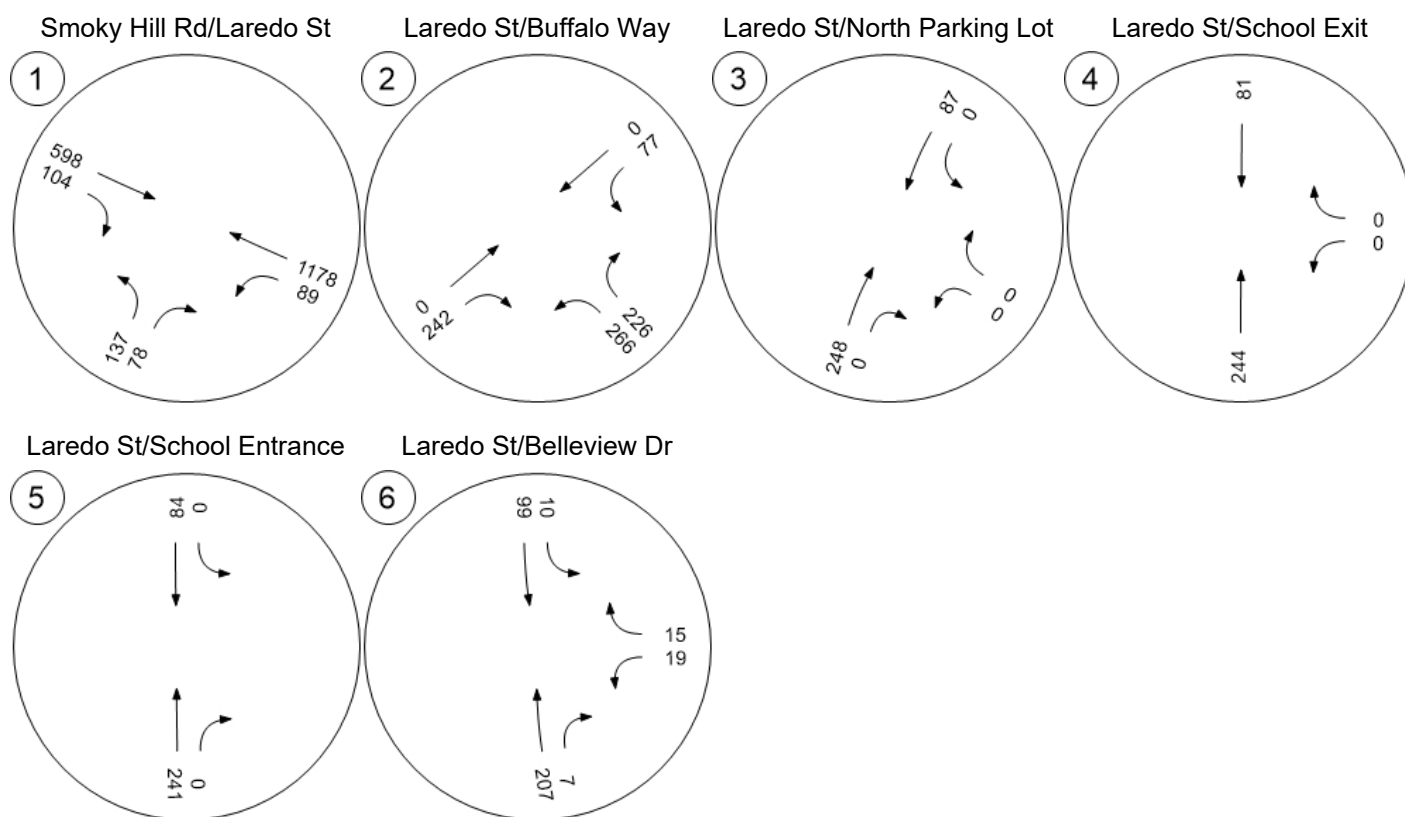


Figure 15 – Year 2027 Background Traffic Volumes – After School Peak Hour

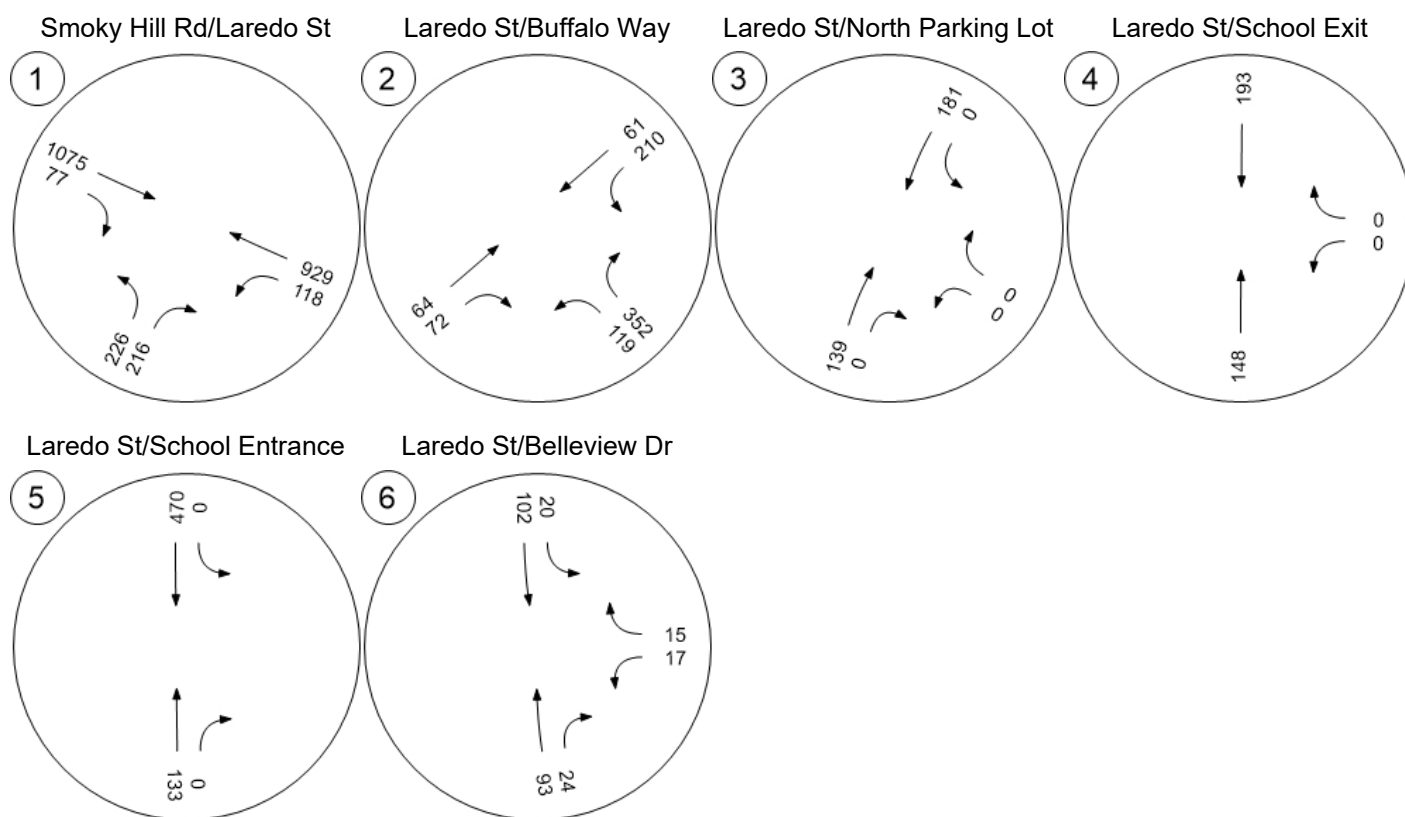


Figure 16 – Year 2027 Background Traffic Volumes – Evening Peak Hour

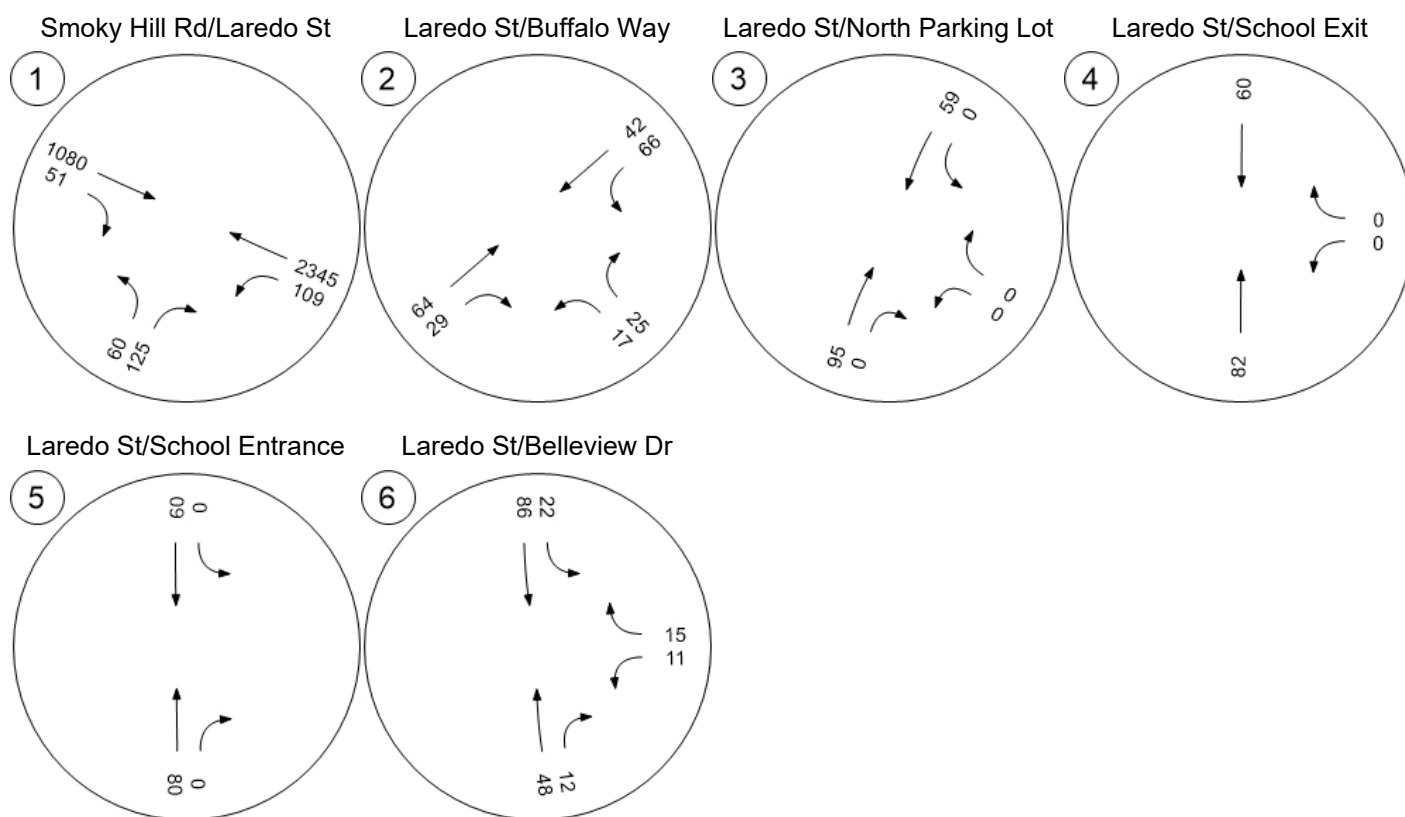


Figure 17 – Year 2027 Total Traffic Volumes – Morning Peak Hour

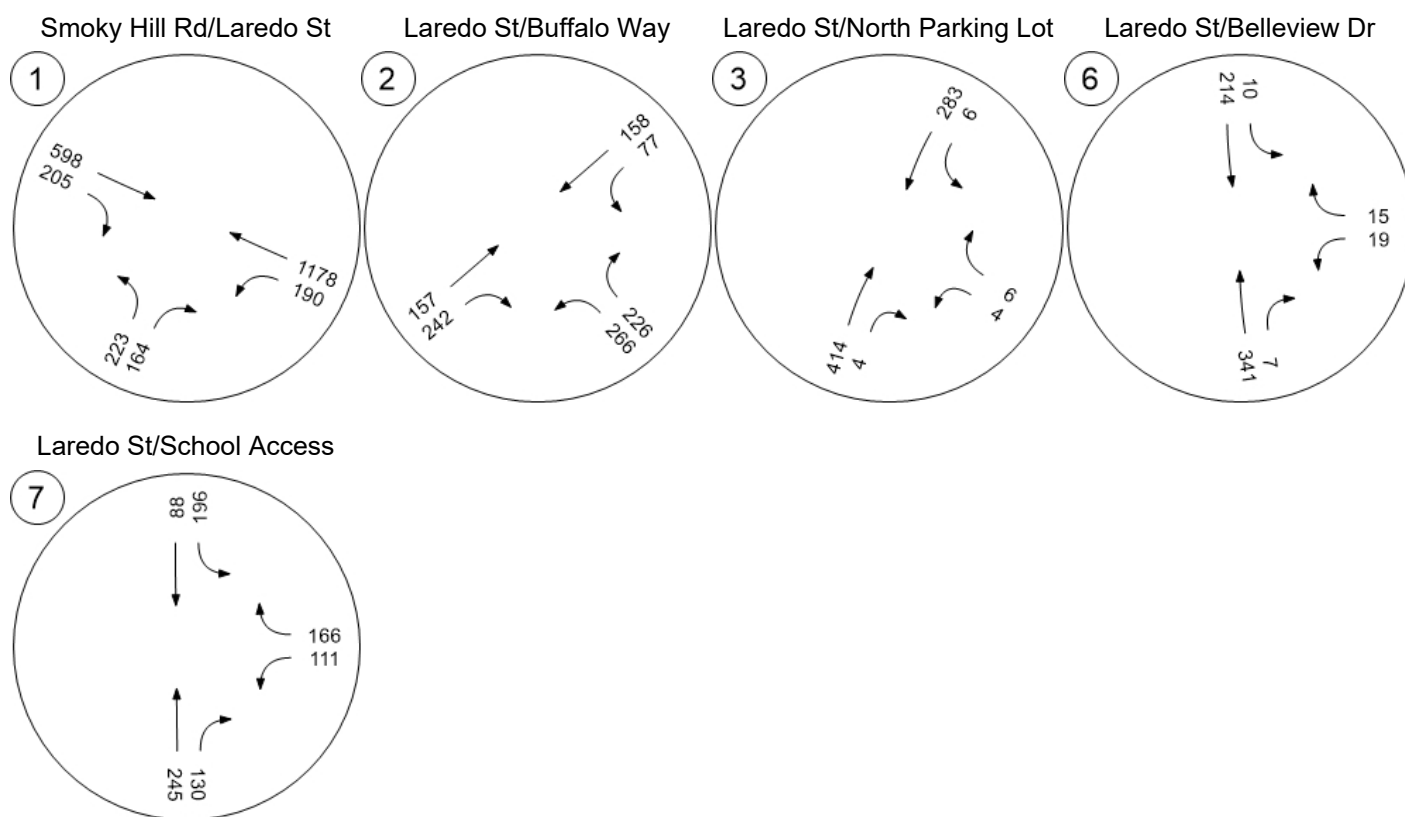


Figure 18 – Year 2027 Total Traffic Volumes – After School Peak Hour

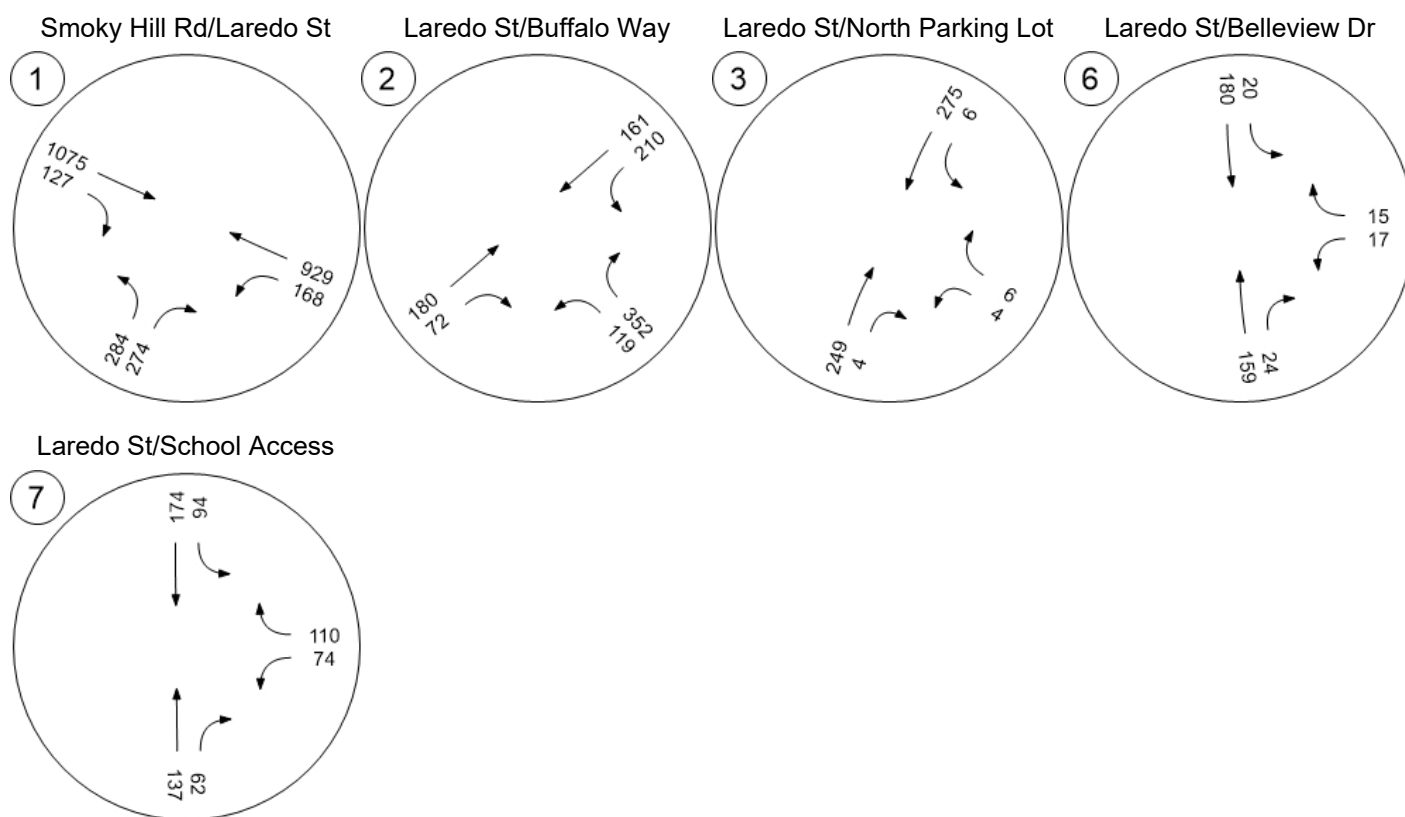


Figure 19 – Year 2027 Total Traffic Volumes – Evening Peak Hour

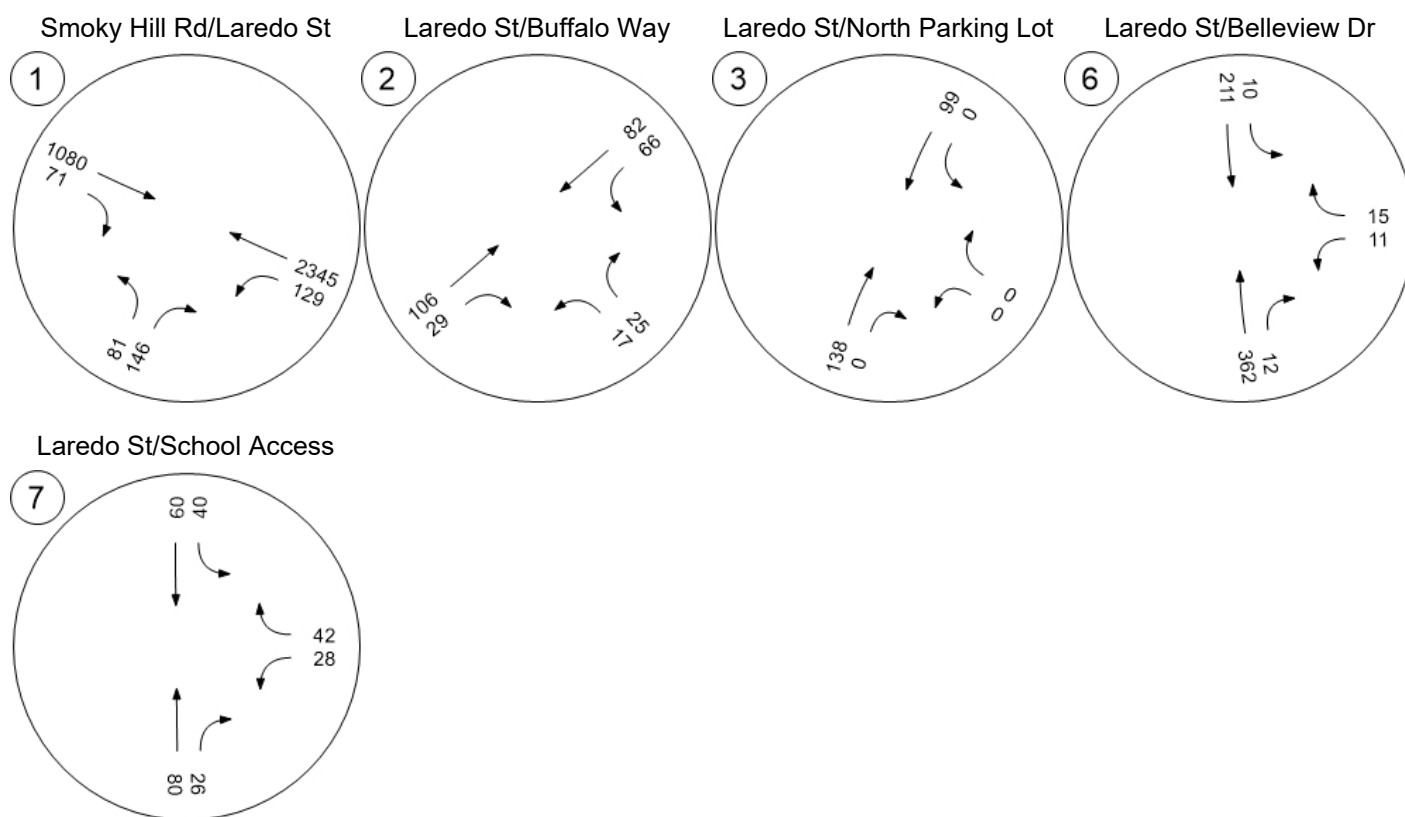


Figure 20 – Year 2050 Background Traffic Volumes – Morning Peak Hour

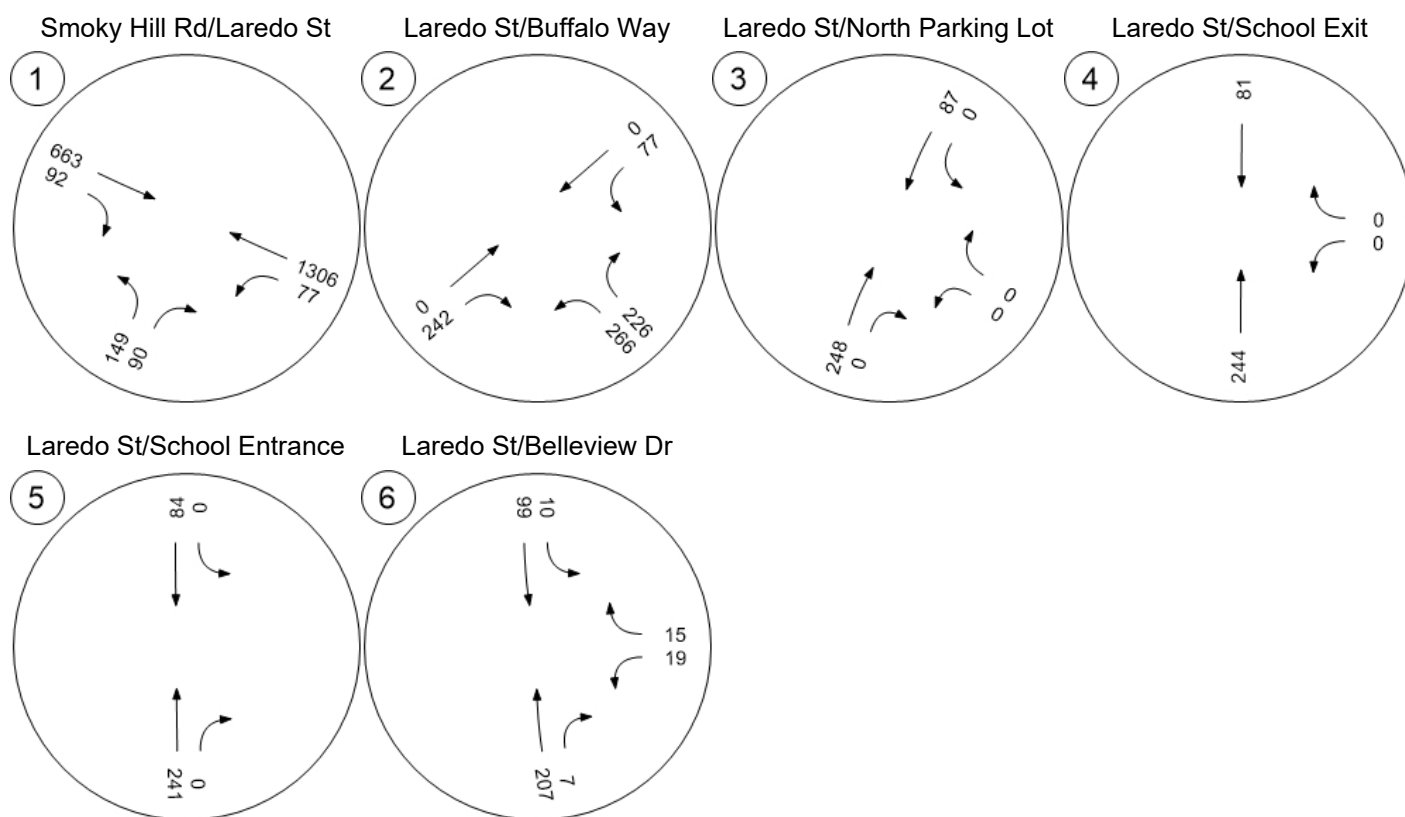


Figure 21 – Year 2050 Background Traffic Volumes – After School Peak Hour

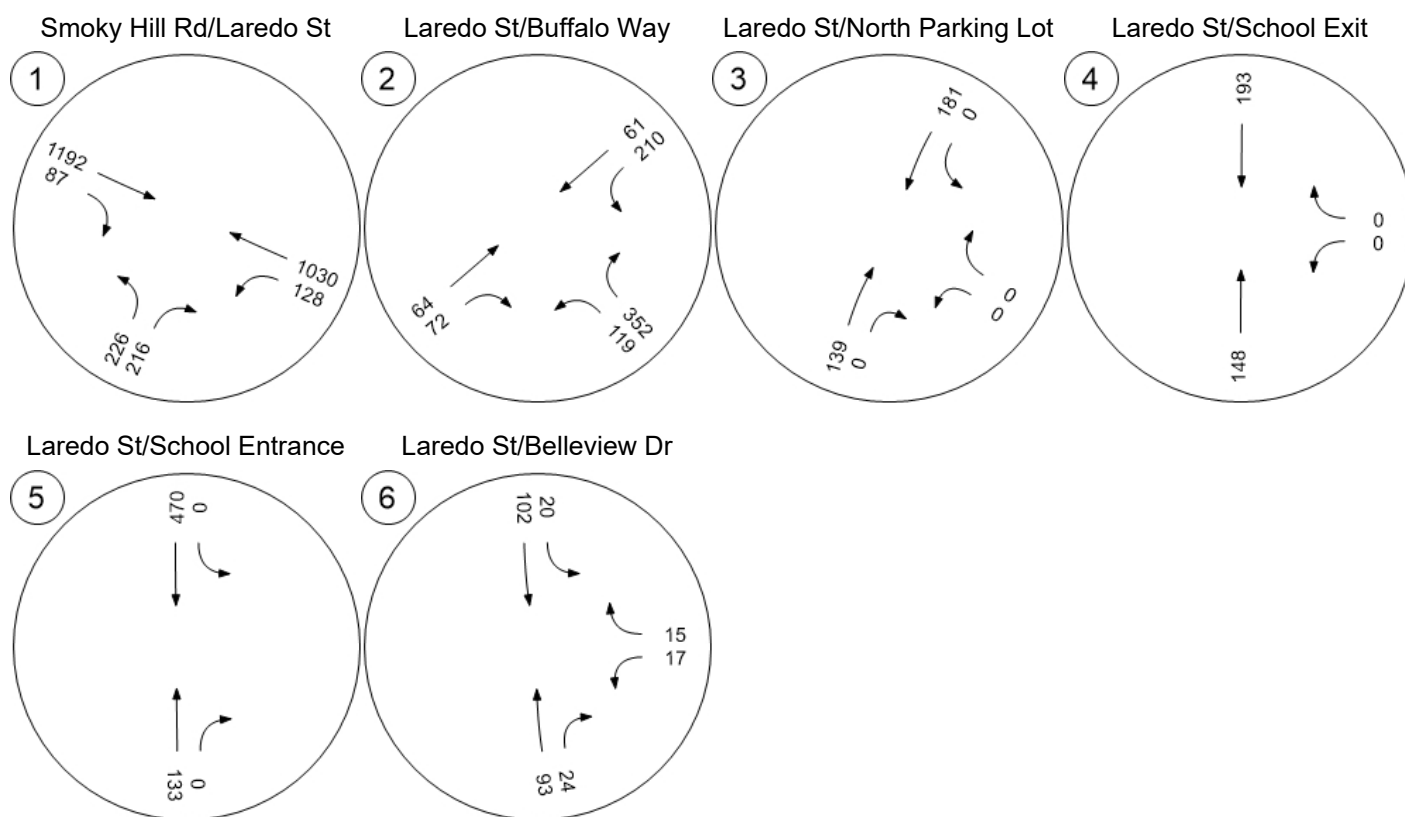


Figure 22 – Year 2050 Background Traffic Volumes – Evening Peak Hour

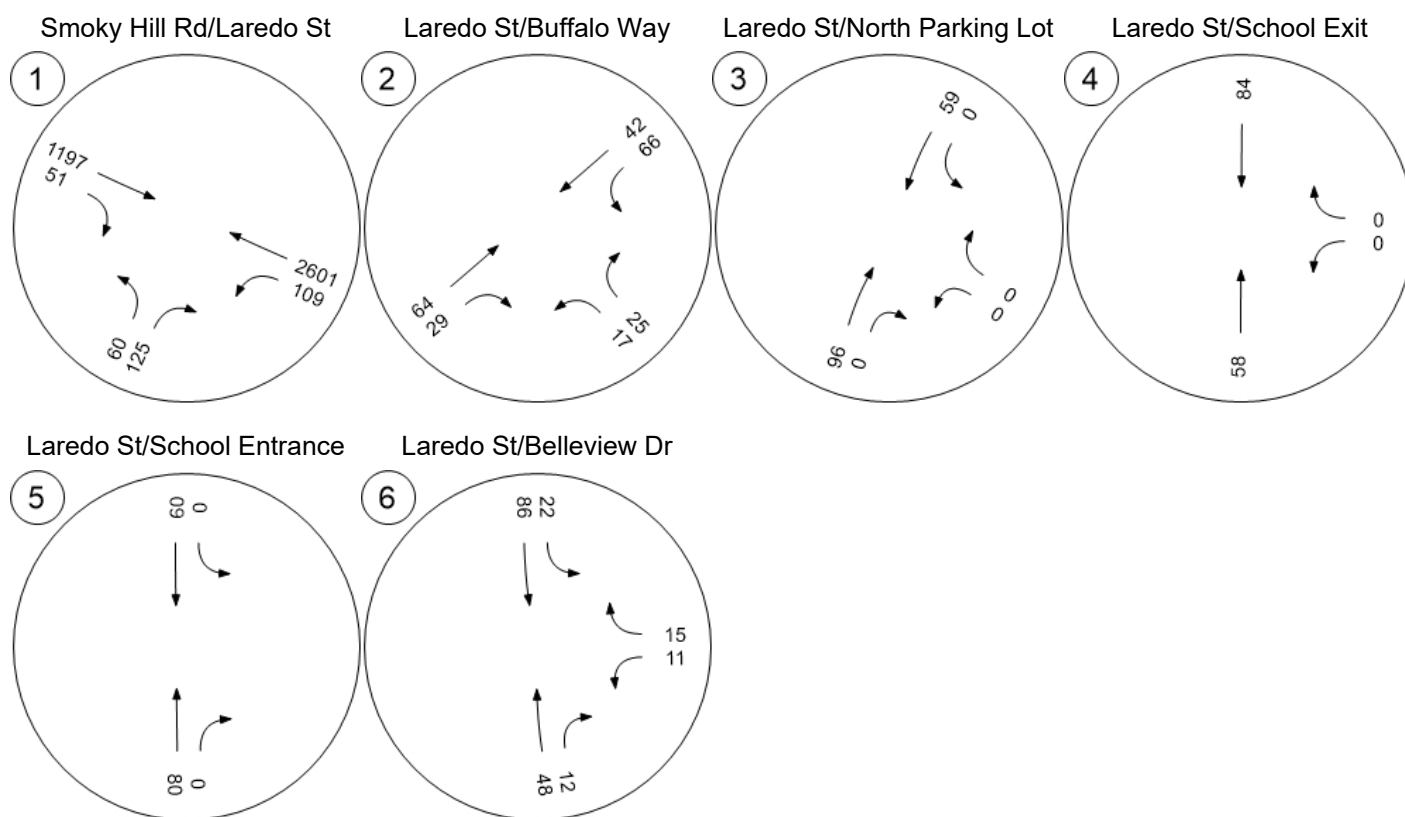


Figure 23 – Year 2050 Total Traffic Volumes – Morning Peak Hour

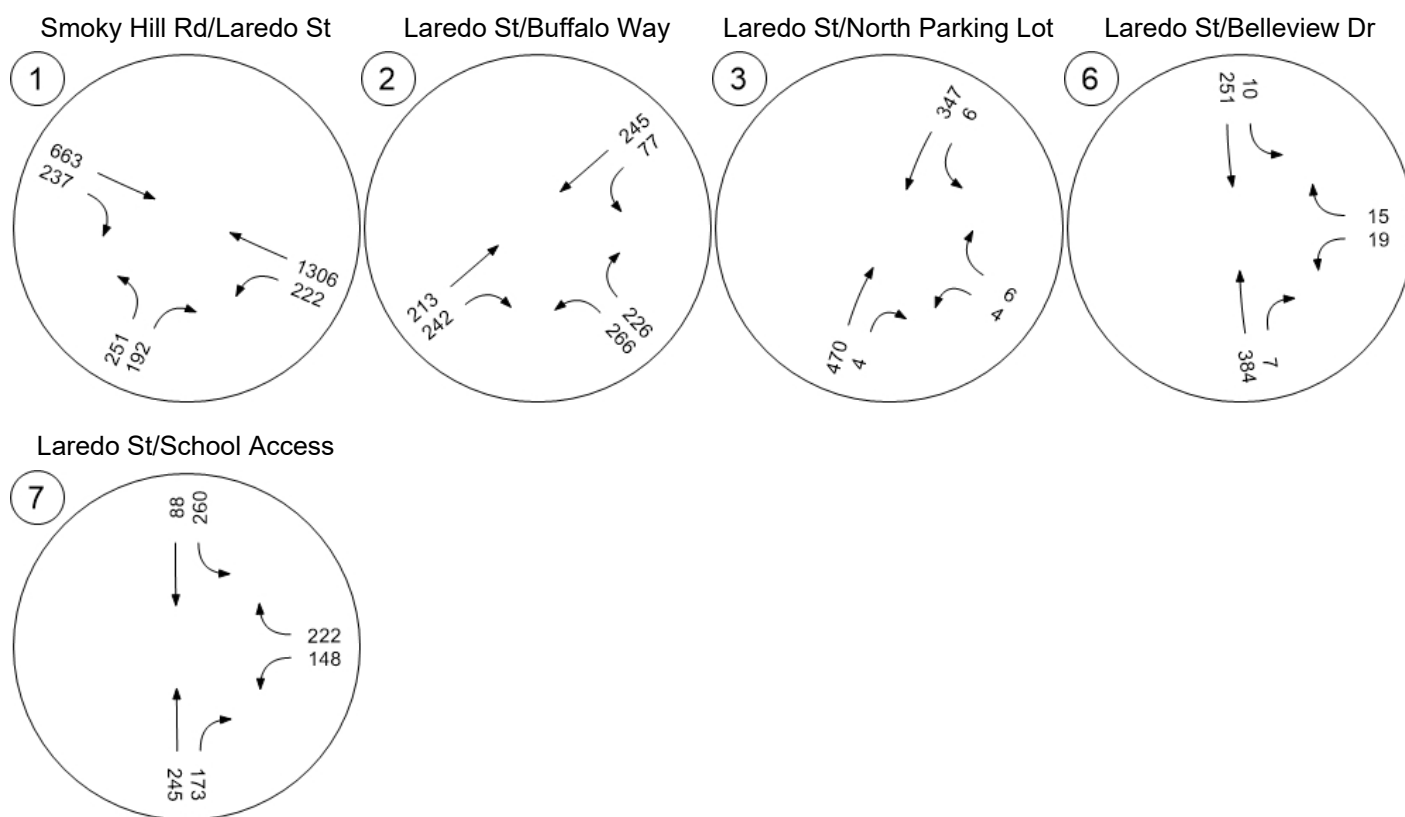


Figure 24 – Year 2050 Total Traffic Volumes – After School Peak Hour

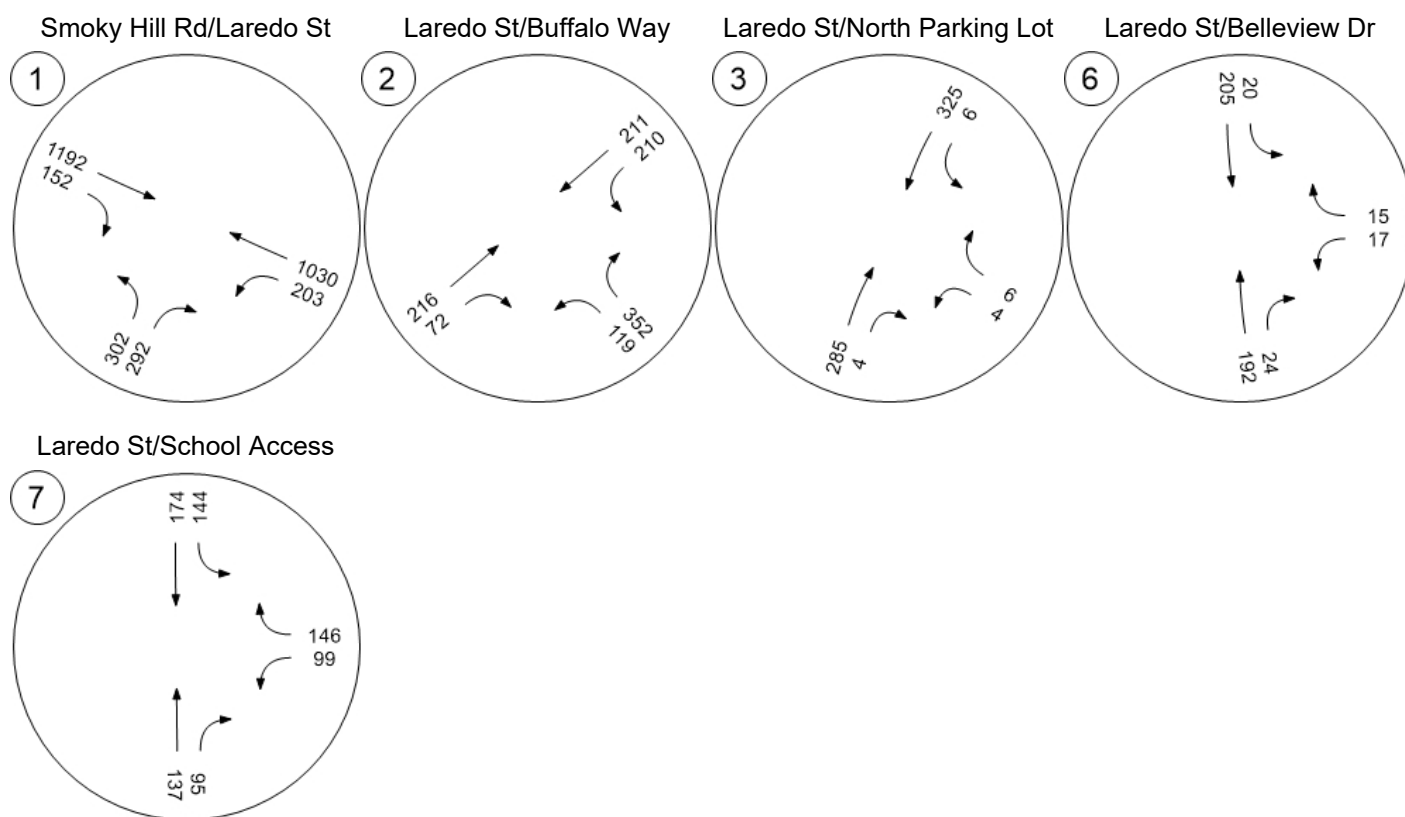


Figure 25 – Year 2050 Total Traffic Volumes – Evening Peak Hour

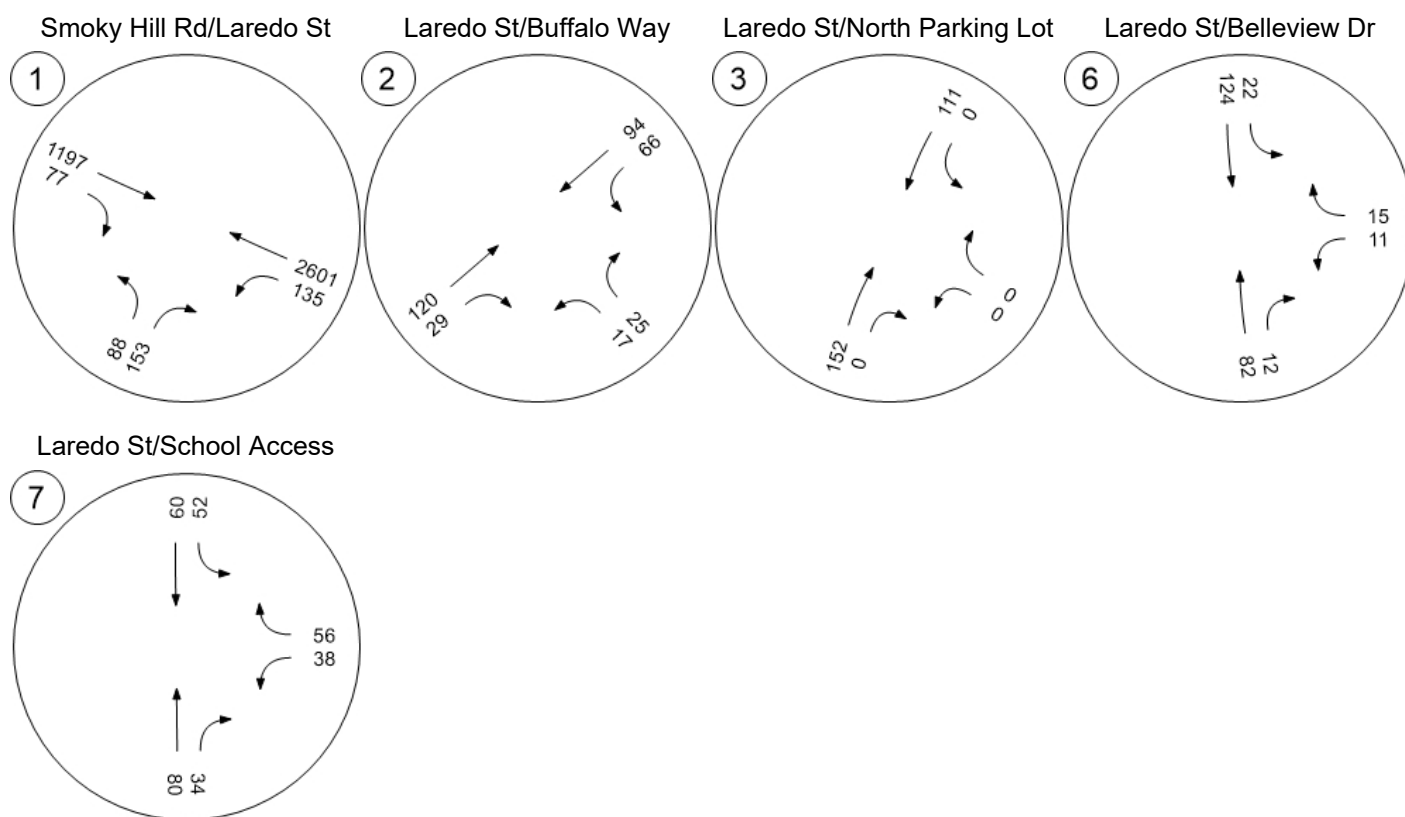
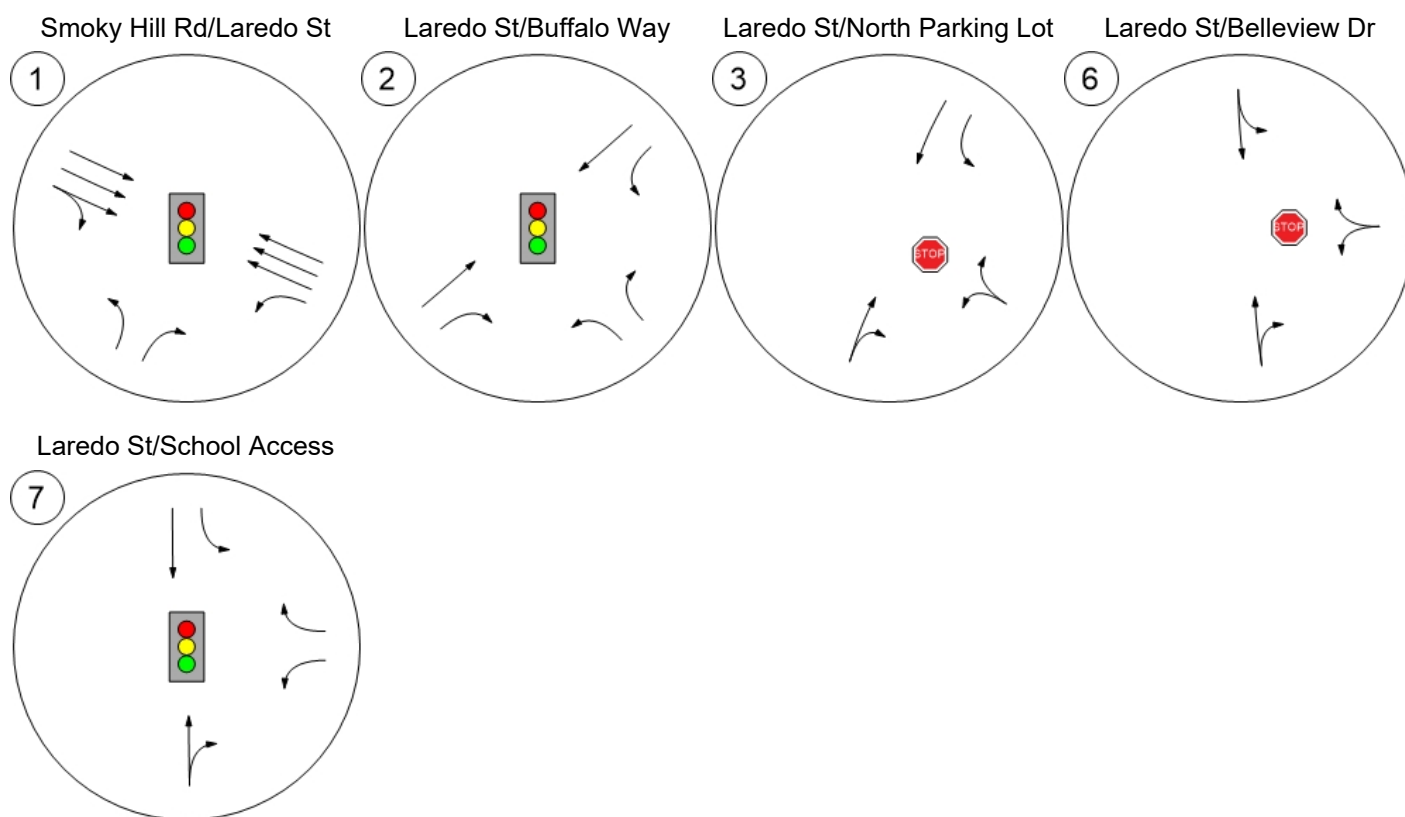


Figure 26 – Laneage and Traffic Control – Year 2027 Total Traffic Volumes



Appendix A

Project Correspondence



MEETING MINUTES

PROJECT: Laredo Middle School Traffic Impact Study

DATE / TIME: February 20, 2025 / 3:00 p.m.

LOCATION: Virtual

PREPARED BY: Joseph L. Henderson, PE, PTOE

ATTENDEES: Dean Kaiser, City of Aurora

COPY TO: Audra Johnson, Turner & Townsend
Bryan Frantz, Collins Engineers

The following represents our understanding of the contents of this meeting. Participants are requested to review these meeting notes and respond to Joe Henderson with any comments within three business days from the distribution of these meeting notes.

Action items and responsible parties are shown in bold font and underlined.

Meeting Summary

Dean provided the following comments on the traffic study assumptions that are dated February 18, 2025.

1. The study needs to include the number of buses and show that the stacking area will accommodate all of the buses that are expected to be on site at any time.
2. Is a left turn lane necessary for southbound parents and buses turning into the school site? Google Maps shows four lanes on Laredo Street south of Smoky Hill Road.
3. The long-term planning horizon should be Year 2050 rather than Year 2045.
4. The city isn't expecting an analysis of the drop-off / pick-up queue length. Dean and Joe agreed that the site plan provides the maximum possible queuing distance which is a big improvement over the queuing distance that is available with the design of the current site.
5. The trip distribution is acceptable.
6. The study should assume 900 students in Year 2027 and 1,200 students in Year 2050.

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Laredo Middle School

Traffic Impact Study

Cherry Creek Schools

Aurora, Colorado

February 24, 2025

Prepared By:



Sustainable Traffic Solutions, Inc.

<http://www.sustainabletrafficsolutions.com/>

Joseph L. Henderson, PE, PTOE

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Laredo Middle School

Traffic Impact Study

1.0 Introduction

Cherry Creek School District is planning to reconstruct Laredo Middle School in the same location that it currently exists. The existing school has an enrollment of approximately 900 students and the new school is expected to have about 900 students, however, the capacity of the new school will be 1,200 students. Figure 1 contains a vicinity map that shows the location of the school south of Smoky Hill Road and east of Laredo Street. The site plan contained in Figure 2 shows that the new school will have two accesses onto Laredo Street. An access on the north side of the site will be for school buses. Parents and staff will use an access on the south side of the site. The student drop-off and pick-up loop will be around the parking area on the west side of the building.

A traffic study scoping meeting was held on February 20, 2025. Minutes from the meeting are contained in Appendix A.

This study has been prepared in conformance with City of Aurora requirements for traffic impact studies¹.

2.0 Study Area

The study area includes the following streets and intersections that surround the school.

- Smoky Hill Road / Laredo Street
- Laredo Street / Buffalo Way
- Laredo Street / Belleview Drive
- Existing school accesses (3 intersections)
- New school accesses (2 intersections)

Smoky Hill Road is classified as a major arterial street and Laredo Street is classified as a collector street. The classifications are based on the City's 2025 Street Map².

2.1 Study Assumptions

The following assumptions were utilized for this study.

Peak Hours. School begins daily at 8:50 a.m. and ends at 3:45 p.m. Peak hours included in the analysis are the morning peak hour that occurs between 8:00 a.m. and 9:30 a.m., after school peak hour that occurs between 3:00 p.m. and 4:30 p.m., and the evening peak hour that occurs between 4:30 p.m. and 6:00 p.m.

¹ Traffic Impact Study Guidelines. City of Aurora Public Works Department. January 1, 2025.

² 2025 Street Map. City of Aurora. February 16, 2025.

Short-Term Planning Horizon. The development is expected to be completed and occupied in the fall of Year 2027, therefore, Year 2027 is the short-term planning horizon.

Long-Term Planning Horizon. The long-term planning horizon is Year 2050 to coincide with the DRCOG regional plan.

Growth in Background Traffic. An annual growth rate on Smoky Hill Road was determined utilizing data from the Year 2050 DRCOG regional plan. The annual growth rate was estimated to be 0.4%. The Year 2020 volumes and Year 2050 projections provided by DRCOG are contained in Appendix B.

Saturation Flow Rate. The saturation flow rate was assumed to be 1,900 passenger cars / hour / lane which is typical in an urban area.

Improvements to Adjacent Roadways. No capacity improvements were assumed in the analysis.

Peak Hour Factor (PHF). For the existing and the short-term planning horizons, the PHF was based on the data collected for the traffic study. At new approaches, the PHF was assumed to be 0.85 for all movements in all of the planning horizons. In the long-term horizon, the PHF on Smoky Hill Road was assumed to be 0.92 unless the existing PHF is higher than 0.92. In that case, the existing PHF was used in the analysis of the long-term volumes.

Truck Percentage. Traffic count data collected for the project is summarized in the following table. It shows that there are 2% trucks on both roadways, therefore, the truck percentage was assumed to be 2% for all movements. The traffic count data collected for the project is discussed in Section 3.0.

Truck Percentages on Key Links in the Study Area

Link	Total	Trucks	% Trucks
Smoky Hill Road west of Laredo Street	27,058	458	2%
Laredo Street south of Smoky Hill Road	5,234	104	2%

3.0 Existing Traffic Volumes

Traffic count data were collected for the project on average weekdays in January and February by Sustainable Traffic Solutions. The data were collected when school was in session and weather did not alter normal traffic patterns. The peak hour volumes are summarized in Figures 4 through 6. Existing and future daily volumes are summarized in Table 1. The traffic count data are contained in Appendix C.

4.0 Site Generated Traffic Volumes

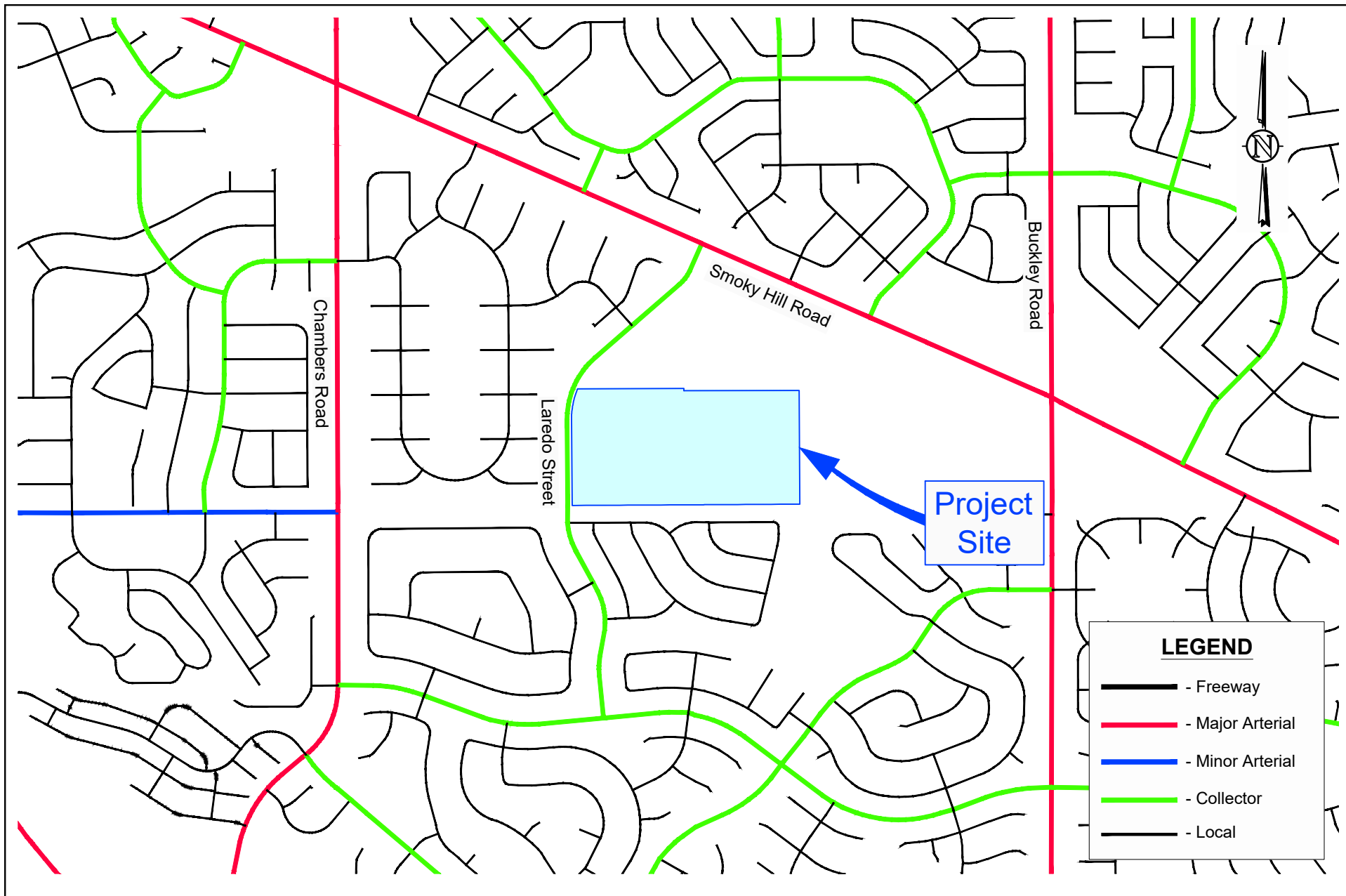
4.1 Trip Generation

In order to estimate the traffic impacts associated with this development, the amount of traffic generated by the project was calculated using trip generation rates contained in the Institute of Transportation Engineers Trip Generation manual³ (see Table 2). The trip generation estimate assumes that there will be 900 students in the building when the school opens in Year 2027 and 1,200 students in the building by the Year 2050.

4.2 Trip Distribution and Assignment

The trip distribution for the development is contained in Figure 7. It is based on the existing peak hour traffic patterns around the school. The peak hour trip assignments are contained in Figures 8 through 10.

³ Trip Generation, 11th Edition. Institute of Transportation Engineers. September 2021.



Laredo Middle School Traffic Impact Study VICINITY MAP

Scale	1" = 1,000'	Date	February 24, 2025	Drawn by	JLH	Job #	Cherry Creek Schools	Figure	1
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Scale	NTS	Date	February 24, 2025	Drawn by	JLH	Job #	Cherry Creek Schools	Figure	2
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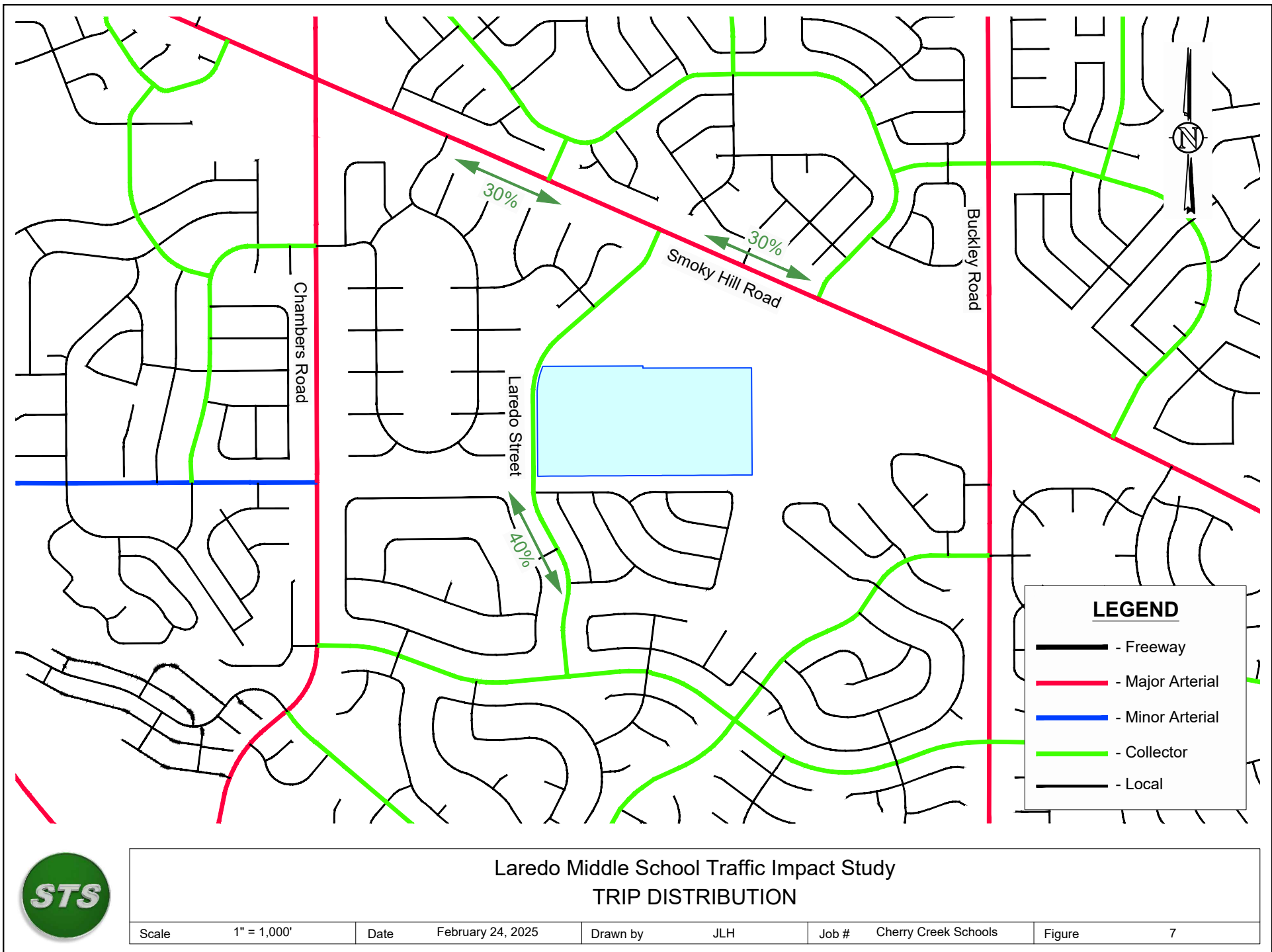


Table 2. Trip Generation Estimate

Land Use	ITE Code ¹	Size	Unit	Average Daily Trips				Morning Peak Hour Trips				After School Peak Hour Trips ²				Evening Peak Hour Trips			
				Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out
Year 2027																			
Middle School	522	900	Students	2.1	1,890	945	945	0.67	603	326	277	0.36	340	156	184	0.15	135	65	70
Year 2050																			
Middle School	522	1,200	Students	2.1	2,520	1,260	1,260	0.67	804	434	370	0.36	454	209	245	0.15	180	86	94

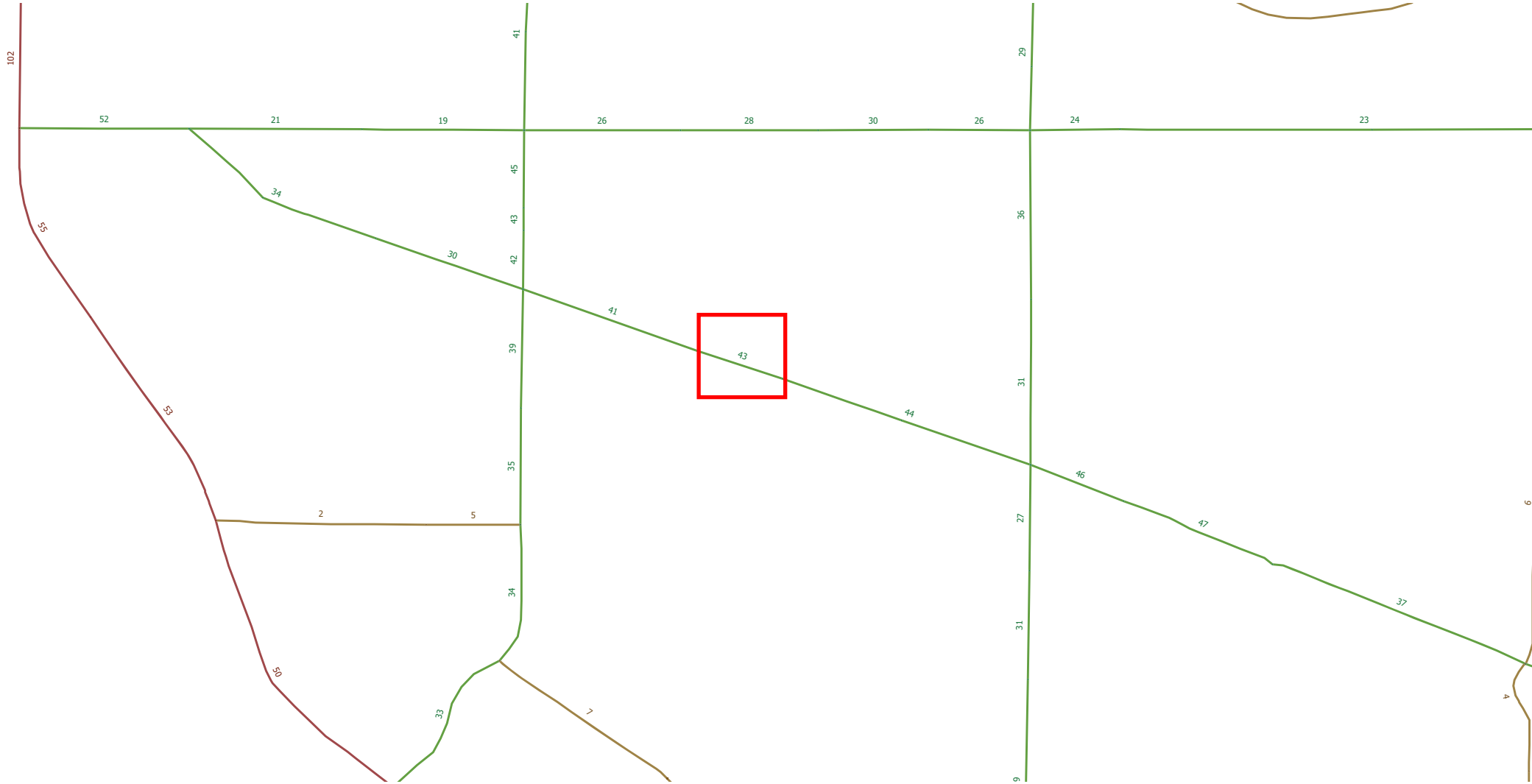
Notes:

- 1. The trip generation estimate is based on rates contained in Trip Generation, 11th Edition (Institute of Transportation Engineers, September 2021).
- 2. The after school peak is based on the PM peak hour of generator.

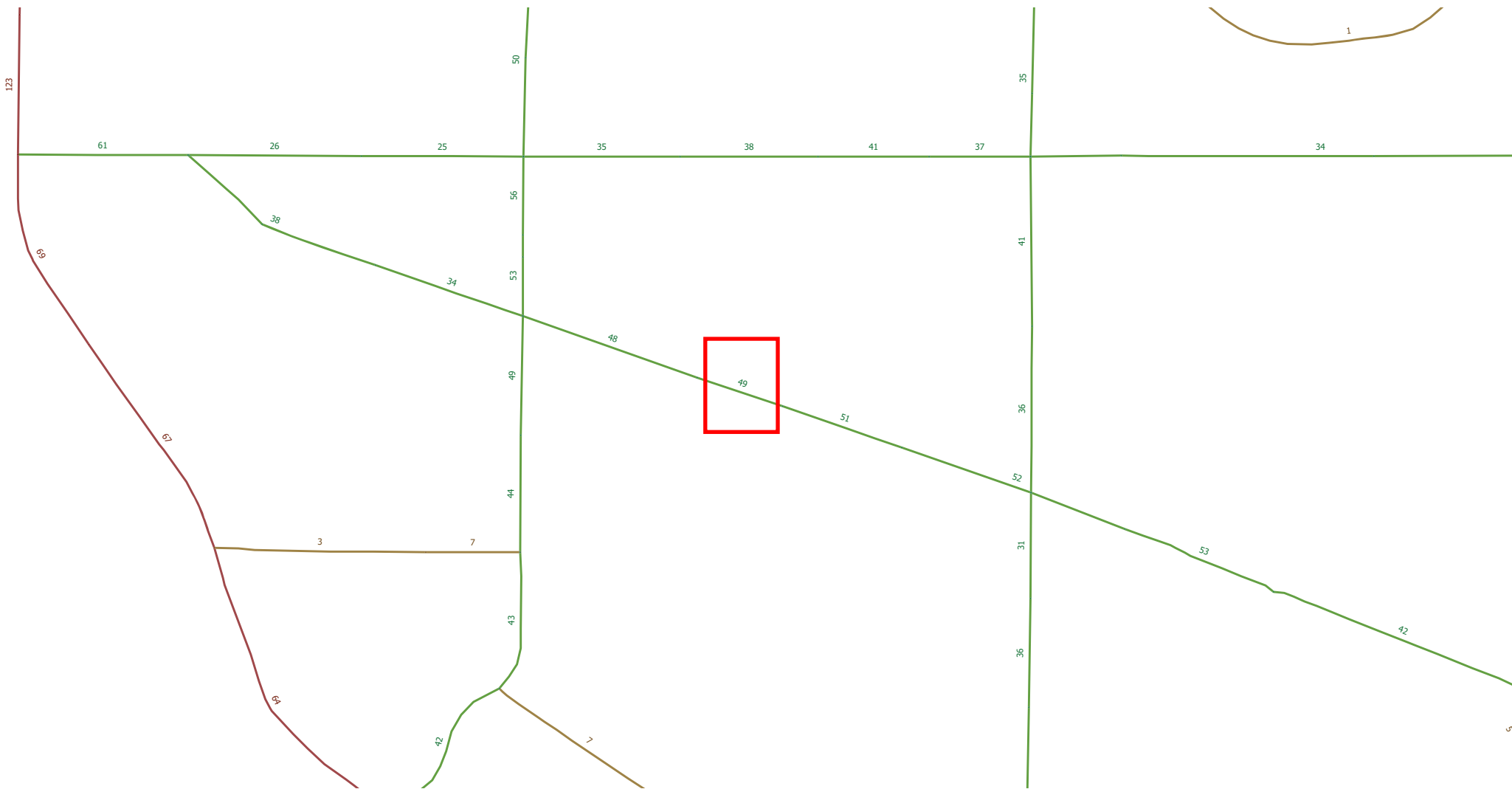
Appendix B

DRCOG Data

Year 2020 Volumes



Year 2050 Volumes



Appendix C

Traffic Count Data

Morning Peak Hour



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SMOKY HILL RD / LAREDO ST

Jan 28th, 2025

Peak Hour: 8:00 - 9:00

Peak 15 Minutes: 8:00 - 8:15

1

Interval Start Time	S Laredo Street				---				E Smoky Hill Rd				E Smoky Hill Rd								
	Northbound				Southbound				Eastbound				Westbound				Pedestrian Crossing				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	North	South	East	West
8:00	0	50	0	40	---	---	---	---	0	0	186	59	1	45	322	0	703	0	0	0	0
8:15	0	75	0	52	---	---	---	---	0	0	142	49	0	63	315	0	696	0	0	0	0
8:30	0	79	0	61	---	---	---	---	0	0	133	83	0	66	270	0	692	0	0	0	0
8:45	0	63	0	55	---	---	---	---	0	0	131	31	0	33	259	0	572	0	0	0	0
9:00	0	13	0	11	---	---	---	---	1	0	138	12	0	16	219	0	410	0	0	0	0
9:15	0	15	0	10	---	---	---	---	0	0	150	7	0	23	222	0	427	0	0	0	0
Count Total	0	295	0	229	---	---	---	---	1	0	880	241	1	246	1607	0	3500	0	0	0	0
Peak Hour	0	267	0	208	---	---	---	---	0	0	592	222	1	207	1166	0	2663	0	0	0	0
Peak Hour Factor	0.85				---				0.83				0.91				---	---	---	---	---
Peak Hour % Trucks	0%	2%	0%	10%	---	---	---	---	0%	0%	4%	0%	0%	1%	1%	0%	2%	---	---	---	---

Peak Hour Inbound & Outbound Traffic

North Leg		South Leg		East Leg		West Leg	
In	Out	In	Out	In	Out	In	Out
0	0	475	429	1374	801	814	1433



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LAREDO ST / BUFFALO WAY

Feb 11th, 2025

Peak Hour: 8:00 - 9:00

Peak 15 Minutes: 8:00 - 8:15

1

Interval Start Time	Laredo Street				Laredo Street				---				Buffalo Way				Total	Pedestrian Crossing			
	Northbound				Southbound				Eastbound				Westbound					North	South	East	West
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right					
8:00	0	0	24	161	0	94	34	0	---	---	---	---	0	33	0	85	431	0	0	0	0
8:15	0	0	46	52	0	101	50	0	---	---	---	---	0	35	0	94	378	0	0	0	0
8:30	0	0	110	10	0	28	120	0	---	---	---	---	0	7	0	18	293	0	0	0	0
8:45	0	0	86	3	0	21	38	0	---	---	---	---	0	2	0	18	168	0	0	0	0
9:00	0	0	16	5	0	15	15	0	---	---	---	---	0	4	0	8	63	0	0	0	0
9:15	0	0	9	2	1	15	4	0	---	---	---	---	0	3	0	7	41	0	0	0	0
Count Total	0	0	291	233	1	274	261	0	---	---	---	---	0	84	0	230	1374	0	0	0	0
Peak Hour	0	0	266	226	0	244	242	0	---	---	---	---	0	77	0	215	1270	0	0	0	0
Peak Hour Factor	0.66				0.80				---				0.57				---	---	---	---	---
Peak Hour % Trucks	0%	0%	2%	4%	0%	2%	0%	0%	---	---	---	---	0%	0%	0%	0%	2%	---	---	---	---

Peak Hour Inbound & Outbound Traffic

North Leg		South Leg		East Leg		West Leg	
In	Out	In	Out	In	Out	In	Out
486	481	492	319	292	470	0	0



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LAREDO ST / NORTH PARKING LOT

Feb 11th, 2025

Peak Hour: 8:00 - 9:00

Peak 15 Minutes: 8:30 - 8:45

1

Interval Start Time	Laredo Street				Laredo Street				---				N Parking Lot Entrance				Pedestrian Crossing				
	Northbound				Southbound				Eastbound				Westbound								
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	North	South	East	West
8:00	0	0	188	4	0	8	64	0	---	---	---	---	0	0	0	3	267	0	0	0	0
8:15	0	0	76	0	2	14	69	0	---	---	---	---	0	2	0	11	174	0	0	0	0
8:30	0	0	91	7	0	46	80	0	---	---	---	---	0	3	0	41	268	0	0	0	0
8:45	0	0	76	1	0	8	34	0	---	---	---	---	0	1	0	21	141	0	0	0	0
9:00	0	0	20	0	1	0	18	0	---	---	---	---	0	1	0	0	40	0	0	0	0
9:15	0	0	11	0	0	1	6	0	---	---	---	---	0	0	0	0	18	0	0	0	0
Count Total	0	0	462	12	3	77	271	0	---	---	---	---	0	7	0	76	908	0	0	0	0
Peak Hour	0	0	431	12	2	76	247	0	---	---	---	---	0	6	0	76	850	0	0	0	0
Peak Hour Factor	0.58				0.64				---				0.47				---	---	---	---	---
Peak Hour % Trucks	0%	0%	4%	0%	0%	0%	0%	0%	---	---	---	---	0%	0%	0%	0%	2%	---	---	---	---

Peak Hour Inbound & Outbound Traffic

North Leg		South Leg		East Leg		West Leg	
In	Out	In	Out	In	Out	In	Out
325	509	443	253	82	88	0	0



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LAREDO ST / SCHOOL EXIT

Feb 11th, 2025

Peak Hour: 8:00 - 9:00

Peak 15 Minutes: 8:00 - 8:15

Interval Start Time	Laredo Street Northbound				Laredo Street Southbound				--- Eastbound				M Parking Lot Entrance Westbound				Total	Pedestrian Crossing			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		North	South	East	West
8:00	0	0	174	0	0	0	60	0	---	---	---	---	0	6	0	19	259	0	0	0	0
8:15	0	0	40	0	0	0	70	0	---	---	---	---	0	12	0	32	154	0	0	0	0
8:30	0	0	30	0	1	0	79	0	---	---	---	---	0	43	0	68	221	0	0	0	0
8:45	1	0	12	0	0	0	38	0	---	---	---	---	0	38	0	64	153	0	0	0	0
9:00	0	0	10	0	0	0	19	0	---	---	---	---	0	3	0	10	42	0	0	0	0
9:15	0	0	6	0	0	1	5	0	---	---	---	---	0	0	0	5	17	0	0	0	0
Count Total	1	0	272	0	1	1	271	0	---	---	---	---	0	102	0	198	846	0	0	0	0
Peak Hour	1	0	256	0	1	0	247	0	---	---	---	---	0	99	0	183	787	0	0	0	0
Peak Hour Factor	0.37				0.78				---				0.64				---	---	---	---	---
Peak Hour % Trucks	0%	0%	3%	0%	0%	0%	3%	0%	---	---	---	---	0%	0%	0%	5%	3%	---	---	---	---

Peak Hour Inbound & Outbound Traffic

North Leg		South Leg		East Leg		West Leg	
In	Out	In	Out	In	Out	In	Out
248	440	257	347	282	0	0	0



LAREDO ST / SCHOOL ENTRANCE

Feb 11th, 2025

Peak Hour: 8:00 - 9:00

Peak 15 Minutes: 8:00 - 8:15

1

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Interval Start Time	Laredo Street				Laredo Street				---				S Parking Lot Entrance				Total	Pedestrian Crossing			
	Northbound				Southbound				Eastbound				Westbound					North	South	East	West
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right					
8:00	0	0	177	21	0	25	43	0	---	---	---	---	0	0	0	0	266	0	0	0	0
8:15	0	0	35	25	0	36	44	0	---	---	---	---	0	0	0	0	140	0	0	0	0
8:30	0	0	29	56	0	59	52	0	---	---	---	---	0	0	0	1	197	0	0	0	0
8:45	0	0	12	36	0	40	50	0	---	---	---	---	0	0	0	0	138	0	0	0	0
9:00	0	0	10	1	0	11	11	0	---	---	---	---	0	0	0	0	33	0	0	0	0
9:15	0	0	6	0	0	2	3	0	---	---	---	---	0	0	0	0	11	0	0	0	0
Count Total	0	0	269	139	0	173	203	0	---	---	---	---	0	0	0	1	785	0	0	0	0
Peak Hour	0	0	253	138	0	160	189	0	---	---	---	---	0	0	0	1	741	0	0	0	0
Peak Hour Factor	0.49				0.79				---				0.25				---	---	---	---	---
Peak Hour % Trucks	0%	0%	2%	1%	0%	4%	1%	0%	---	---	---	---	0%	0%	0%	0%	2%	---	---	---	---

Peak Hour Inbound & Outbound Traffic

North Leg		South Leg		East Leg		West Leg	
In	Out	In	Out	In	Out	In	Out
349	254	391	189	1	298	0	0



LAREDO ST / BELLEVIEW DR
Jan 28th, 2025
Peak Hour: Military Time - Military Time
Peak 15 Minutes: Military Time - Military Time

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Interval Start Time	Laredo Street				Laredo Street				---				Bellevue Drive				Total	Pedestrian Crossing			
	Northbound				Southbound				Eastbound				Westbound					North	South	East	West
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right					
8:00	0	0	190	2	0	2	39	0	---	---	---	---	0	3	0	6	242	0	0	0	0
8:15	0	0	52	3	0	5	42	0	---	---	---	---	0	5	0	1	108	0	0	0	0
8:30	0	0	91	2	1	2	63	0	---	---	---	---	1	7	0	5	172	0	0	0	0
8:45	0	0	24	0	0	1	60	0	---	---	---	---	0	4	0	3	92	0	0	0	0
9:00	0	0	9	0	0	3	7	0	---	---	---	---	0	1	0	2	22	0	0	0	0
9:15	0	0	9	1	0	2	4	0	---	---	---	---	0	0	0	2	18	0	0	0	0
Count Total	0	0	375	8	1	15	215	0	---	---	---	---	1	20	0	19	654	0	0	0	0
Peak Hour	0	0	357	7	1	10	204	0	---	---	---	---	1	19	0	15	614	0	0	0	0
Peak Hour Factor	0.47				0.81				---				0.67				---	---	---	---	---
Peak Hour % Trucks	0%	0%	3%	29%	0%	0%	0%	0%	---	---	---	---	0%	0%	0%	0%	2%	---	---	---	---

Peak Hour Inbound & Outbound Traffic

North Leg		South Leg		East Leg		West Leg	
In	Out	In	Out	In	Out	In	Out
215	373	364	223	35	18	0	0

After School Peak Hour



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SMOKY HILL RD / LAREDO ST

Jan 28th, 2025

Peak Hour: 15:30 - 16:30

Peak 15 Minutes: 15:45 - 16:00

1

Interval Start Time	S Laredo Street				---				E Smoky Hill Rd				E Smoky Hill Rd				Total	Pedestrian Crossing			
	Northbound				Southbound				Eastbound				Westbound					North	South	East	West
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right					
15:00	0	9	0	11	---	---	---	---	0	0	245	25	0	35	213	0	538	0	0	0	0
15:15	0	16	0	29	---	---	---	---	0	0	228	66	1	64	174	0	578	0	0	0	0
15:30	0	104	0	109	---	---	---	---	0	0	237	57	0	70	212	0	789	0	0	0	0
15:45	0	134	0	123	---	---	---	---	0	0	286	41	0	52	246	0	882	0	0	0	0
16:00	0	43	0	31	---	---	---	---	0	0	259	15	1	15	221	0	585	0	0	0	0
16:15	0	10	0	19	---	---	---	---	0	0	282	7	0	26	241	0	585	0	0	0	0
Count Total	0	316	0	322	---	---	---	---	0	0	1537	211	2	262	1307	0	3957	0	0	0	0
Peak Hour	0	291	0	282	---	---	---	---	0	0	1064	120	1	163	920	0	2841	0	0	0	0
Peak Hour Factor	0.56				---				0.91				0.91				---	---	---	---	---
Peak Hour % Trucks	0%	3%	0%	1%	---	---	---	---	0%	0%	1%	4%	0%	2%	1%	0%	2%	---	---	---	---

Peak Hour Inbound & Outbound Traffic

North Leg		South Leg		East Leg		West Leg	
In	Out	In	Out	In	Out	In	Out
0	0	573	283	1084	1347	1184	1211



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LAREDO ST / BUFFALO WAY

Feb 11th, 2025

Peak Hour: 15:15 - 16:15

Peak 15 Minutes: 15:30 - 15:45

1

Interval Start Time	Laredo Street				Laredo Street				---				Buffalo Way				Total	Pedestrian Crossing			
	Northbound				Southbound				Eastbound				Westbound					North	South	East	West
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right					
15:00	0	0	22	5	0	47	18	0	---	---	---	---	0	3	0	6	101	0	0	0	0
15:15	0	0	11	35	0	85	27	0	---	---	---	---	0	12	0	25	195	0	0	0	0
15:30	0	0	21	22	0	69	58	0	---	---	---	---	0	73	0	202	445	0	0	0	0
15:45	0	0	121	12	0	40	46	0	---	---	---	---	0	26	0	107	352	0	0	0	0
16:00	0	0	42	3	0	16	18	0	---	---	---	---	0	8	0	18	105	0	0	0	0
16:15	0	0	17	1	0	8	18	0	---	---	---	---	0	1	0	11	56	0	0	0	0
Count Total	0	0	234	78	0	265	185	0	---	---	---	---	0	123	0	369	1254	0	0	0	0
Peak Hour	0	0	195	72	0	210	149	0	---	---	---	---	0	119	0	352	1097	0	0	0	0
Peak Hour Factor	0.50				0.71				---				0.43				---	---	---	---	---
Peak Hour % Trucks	0%	0%	7%	3%	0%	3%	6%	0%	---	---	---	---	0%	0%	0%	0%	3%	---	---	---	---

Peak Hour Inbound & Outbound Traffic

North Leg		South Leg		East Leg		West Leg	
In	Out	In	Out	In	Out	In	Out
359	547	267	268	471	282	0	0



LAREDO ST / NORTH PARKING LOT

Feb 11th, 2025

Peak Hour: 15:15 - 16:15

Peak 15 Minutes: 15:45 - 16:00

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1

Interval Start Time	Laredo Street Northbound				Laredo Street Southbound				--- Eastbound				N Parking Lot Entrance Westbound				Total	Pedestrian Crossing			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		North	South	East	West
15:00	0	0	26	1	0	0	20	0	---	---	---	---	0	0	0	0	47	0	0	0	0
15:15	0	0	46	6	0	8	31	0	---	---	---	---	0	0	0	1	92	0	0	0	0
15:30	0	0	37	8	1	13	116	0	---	---	---	---	0	6	0	5	186	0	0	0	0
15:45	0	0	106	1	0	5	69	0	---	---	---	---	0	11	0	32	224	0	0	0	0
16:00	0	0	29	1	0	1	26	0	---	---	---	---	0	5	0	14	76	0	0	0	0
16:15	0	0	17	0	0	0	19	0	---	---	---	---	0	0	0	1	37	0	0	0	0
Count Total	0	0	261	17	1	27	281	0	---	---	---	---	0	22	0	53	662	0	0	0	0
Peak Hour	0	0	218	16	1	27	242	0	---	---	---	---	0	22	0	52	578	0	0	0	0
Peak Hour Factor	0.55				0.52				---				0.43				---	---	---	---	---
Peak Hour % Trucks	0%	0%	5%	0%	0%	0%	3%	0%	---	---	---	---	0%	0%	0%	0%	3%	---	---	---	---

Peak Hour Inbound & Outbound Traffic

North Leg		South Leg		East Leg		West Leg	
In	Out	In	Out	In	Out	In	Out
270	271	234	264	74	43	0	0



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LAREDO ST / SCHOOL EXIT

Feb 11th, 2025

Peak Hour: 15:00 - 16:00

Peak 15 Minutes: 15:45 - 16:00

1

Interval Start Time	Laredo Street				Laredo Street				---				M Parking Lot Entrance				Total	Pedestrian Crossing			
	Northbound				Southbound				Eastbound				Westbound					North	South	East	West
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right					
15:00	0	0	25	0	0	0	19	0	---	---	---	---	0	1	0	2	47	0	0	0	0
15:15	0	0	50	0	0	0	30	0	---	---	---	---	0	2	0	3	85	0	0	0	0
15:30	0	0	41	0	0	0	125	0	---	---	---	---	0	3	0	3	172	0	0	0	0
15:45	1	0	48	0	0	0	80	0	---	---	---	---	0	43	0	59	231	0	0	0	0
16:00	0	0	22	0	0	0	30	0	---	---	---	---	0	4	0	7	63	0	0	0	0
16:15	0	0	12	0	0	0	18	0	---	---	---	---	0	1	0	5	36	0	0	0	0
Count Total	1	0	198	0	0	0	302	0	---	---	---	---	0	54	0	79	634	0	0	0	0
Peak Hour	1	0	164	0	0	0	254	0	---	---	---	---	0	49	0	67	535	0	0	0	0
Peak Hour Factor	0.83				0.51				---				0.28				---	---	---	---	---
Peak Hour % Trucks	0%	0%	2%	0%	0%	0%	3%	0%	---	---	---	---	0%	6%	0%	10%	4%	---	---	---	---

Peak Hour Inbound & Outbound Traffic

North Leg		South Leg		East Leg		West Leg	
In	Out	In	Out	In	Out	In	Out
254	231	165	304	116	0	0	0



LAREDO ST / SCHOOL ENTRANCE Feb

11th, 2025

Peak Hour: 15:15 - 16:15

Peak 15 Minutes: 15:45 - 16:00

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Interval Start Time	Laredo Street				Laredo Street				---				S Parking Lot Entrance				Pedestrian Crossing				
	Northbound				Southbound				Eastbound				Westbound								
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	North	South	East	West
15:00	0	0	18	4	0	10	11	0	---	---	---	---	0	1	0	6	50	0	0	0	0
15:15	0	0	51	9	0	15	18	0	---	---	---	---	0	0	0	0	93	0	0	0	0
15:30	0	0	45	11	0	16	102	0	---	---	---	---	0	0	0	0	174	0	0	0	0
15:45	0	0	44	14	0	24	96	0	---	---	---	---	0	3	0	1	182	0	0	0	0
16:00	0	0	9	2	0	6	30	0	---	---	---	---	0	8	0	11	66	0	0	0	0
16:15	0	0	11	1	0	5	14	0	---	---	---	---	0	1	0	2	34	0	0	0	0
Count Total	0	0	178	41	0	76	271	0	---	---	---	---	0	13	0	20	599	0	0	0	0
Peak Hour	0	0	149	36	0	61	246	0	---	---	---	---	0	11	0	12	515	0	0	0	0
Peak Hour Factor	0.80				0.64				---				0.30				---	---	---	---	---
Peak Hour % Trucks	0%	0%	2%	6%	0%	13%	2%	0%	---	---	---	---	0%	0%	0%	0%	3%	---	---	---	---

Peak Hour Inbound & Outbound Traffic

North Leg		South Leg		East Leg		West Leg	
In	Out	In	Out	In	Out	In	Out
307	161	185	257	23	97	0	0



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LAREDO ST / BELLEVIEW DR

Jan 28th, 2025

Peak Hour: 15:15 - 16:15

Peak 15 Minutes: 15:45 - 16:00

1

Interval Start Time	Laredo Street				Laredo Street				---				Bellevue Drive				Total	Pedestrian Crossing			
	Northbound				Southbound				Eastbound				Westbound					North	South	East	West
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right					
15:00	0	0	21	3	0	4	11	0	---	---	---	---	0	0	0	3	42	0	0	0	0
15:15	0	0	58	5	0	2	20	0	---	---	---	---	0	1	0	3	89	0	0	0	0
15:30	0	0	48	8	1	6	37	0	---	---	---	---	0	2	0	4	106	0	0	0	0
15:45	0	0	26	8	0	6	85	0	---	---	---	---	0	11	0	6	142	0	0	0	0
16:00	0	0	13	3	0	6	36	0	---	---	---	---	0	3	0	2	63	0	0	0	0
16:15	0	0	15	4	0	7	17	0	---	---	---	---	0	1	0	3	47	0	0	0	0
Count Total	0	0	181	31	1	31	206	0	---	---	---	---	0	18	0	21	489	0	0	0	0
Peak Hour	0	0	145	24	1	20	178	0	---	---	---	---	0	17	0	15	400	0	0	0	0
Peak Hour Factor	0.67				0.55				---				0.47				---	---	---	---	---
Peak Hour % Trucks	0%	0%	4%	0%	0%	10%	2%	0%	---	---	---	---	0%	0%	0%	0%	3%	---	---	---	---

Peak Hour Inbound & Outbound Traffic

North Leg		South Leg		East Leg		West Leg	
In	Out	In	Out	In	Out	In	Out
199	161	169	195	32	44	0	0

Evening Peak Hour



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SMOKY HILL RD / LAREDO ST

Jan 28th, 2025

Peak Hour: 16:30 - 17:30

Peak 15 Minutes: 16:45 - 17:00

1

Interval Start Time	S Laredo Street				---				E Smoky Hill Rd				E Smoky Hill Rd				Pedestrian Crossing				
	Northbound				Southbound				Eastbound				Westbound								
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	North	South	East	West
16:30	0	10	0	38	---	---	---	---	0	0	266	21	0	36	204	0	575	0	0	0	0
16:45	0	39	0	43	---	---	---	---	0	0	273	19	0	30	189	0	593	0	0	0	0
17:00	0	17	0	35	---	---	---	---	0	0	257	13	0	30	223	0	575	0	0	0	0
17:15	0	9	0	25	---	---	---	---	0	0	273	13	0	28	231	0	579	0	0	0	0
17:30	0	12	0	26	---	---	---	---	0	0	254	6	0	30	204	0	532	0	0	0	0
17:45	0	7	0	29	---	---	---	---	0	0	270	8	0	35	182	0	531	0	0	0	0
Count Total	0	94	0	196	---	---	---	---	0	0	1593	80	0	189	1233	0	3385	0	0	0	0
Peak Hour	0	75	0	141	---	---	---	---	0	0	1069	66	0	124	847	0	2322	0	0	0	0
Peak Hour Factor	0.66				---				0.97				0.94				---	---	---	---	---
Peak Hour % Trucks	0%	1%	0%	1%	---	---	---	---	0%	0%	2%	0%	0%	0%	1%	0%	1%	---	---	---	---

Peak Hour Inbound & Outbound Traffic

North Leg		South Leg		East Leg		West Leg	
In	Out	In	Out	In	Out	In	Out
0	0	216	190	971	1210	1135	922



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LAREDO ST / BUFFALO WAY

Feb 11th, 2025

Peak Hour: 16:30 - 17:30

Peak 15 Minutes: 16:45 - 17:00

1

Interval Start Time	Laredo Street				Laredo Street				---				Buffalo Way				Total	Pedestrian Crossing			
	Northbound				Southbound				Eastbound				Westbound					North	South	East	West
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right					
16:30	0	0	22	4	0	12	28	0	---	---	---	---	0	5	0	7	78	0	0	0	0
16:45	0	0	40	6	0	15	22	0	---	---	---	---	0	4	0	8	95	0	0	0	0
17:00	0	0	19	10	0	17	9	0	---	---	---	---	0	3	0	5	63	0	0	0	0
17:15	0	0	14	9	0	22	13	0	---	---	---	---	0	5	0	5	68	0	0	0	0
17:30	0	0	11	4	0	7	14	0	---	---	---	---	0	2	0	4	42	0	0	0	0
17:45	0	0	8	5	0	13	12	0	---	---	---	---	0	3	0	6	47	0	0	0	0
Count Total	0	0	114	38	0	86	98	0	---	---	---	---	0	22	0	35	393	0	0	0	0
Peak Hour	0	0	95	29	0	66	72	0	---	---	---	---	0	17	0	25	304	0	0	0	0
Peak Hour Factor	0.67				0.86				---				0.88				---	---	---	---	---
Peak Hour % Trucks	0%	0%	4%	0%	0%	0%	3%	0%	---	---	---	---	0%	0%	0%	0%	2%	---	---	---	---

Peak Hour Inbound & Outbound Traffic

North Leg		South Leg		East Leg		West Leg	
In	Out	In	Out	In	Out	In	Out
138	120	124	89	42	95	0	0



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LAREDO ST / NORTH PARKING LOT

Feb 11th, 2025

Peak Hour: 16:30 - 17:30

Peak 15 Minutes: 16:45 - 17:00

1

Interval Start Time	Laredo Street Northbound				Laredo Street Southbound				--- Eastbound				N Parking Lot Entrance Westbound				Total	Pedestrian Crossing			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		North	South	East	West
16:30	0	0	24	1	0	2	31	0	---	---	---	---	0	0	0	2	60	0	0	0	0
16:45	0	0	46	0	0	2	24	0	---	---	---	---	0	1	0	4	77	0	0	0	0
17:00	0	0	27	0	0	0	12	0	---	---	---	---	0	0	0	1	40	0	0	0	0
17:15	0	0	19	0	0	2	16	0	---	---	---	---	0	0	0	4	41	0	0	0	0
17:30	0	0	14	0	0	0	16	0	---	---	---	---	0	0	0	1	31	0	0	0	0
17:45	0	0	14	0	0	0	14	0	---	---	---	---	0	0	0	0	28	0	0	0	0
Count Total	0	0	144	1	0	6	113	0	---	---	---	---	0	1	0	12	277	0	0	0	0
Peak Hour	0	0	116	1	0	6	83	0	---	---	---	---	0	1	0	11	218	0	0	0	0
Peak Hour Factor	0.64				0.67				---				0.60				---	---	---	---	---
Peak Hour % Trucks	0%	0%	3%	0%	0%	0%	2%	0%	---	---	---	---	0%	0%	0%	0%	3%	---	---	---	---

Peak Hour Inbound & Outbound Traffic

North Leg		South Leg		East Leg		West Leg	
In	Out	In	Out	In	Out	In	Out
89	127	117	84	12	7	0	0



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LAREDO ST / SCHOOL EXIT
Feb 11th, 2025
Peak Hour: 16:30 - 17:30
Peak 15 Minutes: 16:45 - 17:00

1

Interval Start Time	Laredo Street				Laredo Street				---				M Parking Lot Entrance				Total	Pedestrian Crossing			
	Northbound				Southbound				Eastbound				Westbound					North	South	East	West
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right					
16:30	0	0	21	0	0	0	32	0	---	---	---	---	0	0	0	4	57	0	0	0	0
16:45	0	0	20	0	0	0	25	0	---	---	---	---	0	17	0	26	88	0	0	0	0
17:00	0	0	23	0	0	0	12	0	---	---	---	---	0	3	0	4	42	0	0	0	0
17:15	0	0	19	0	0	0	16	0	---	---	---	---	0	0	0	0	35	0	0	0	0
17:30	0	0	14	0	0	0	16	0	---	---	---	---	0	0	0	0	30	0	0	0	0
17:45	0	0	15	0	0	0	14	0	---	---	---	---	0	0	0	0	29	0	0	0	0
Count Total	0	0	112	0	0	0	115	0	---	---	---	---	0	20	0	34	281	0	0	0	0
Peak Hour	0	0	83	0	0	0	85	0	---	---	---	---	0	20	0	34	222	0	0	0	0
Peak Hour Factor	0.90				0.85				---				0.31				---	---	---	---	---
Peak Hour % Trucks	0%	0%	1%	0%	0%	0%	2%	0%	---	---	---	---	0%	5%	0%	9%	3%	---	---	---	---

Peak Hour Inbound & Outbound Traffic

North Leg		South Leg		East Leg		West Leg	
In	Out	In	Out	In	Out	In	Out
85	117	83	105	54	0	0	0



LAREDO ST / SCHOOL ENTRANCE

Feb 11th, 2025

Peak Hour: 16:30 - 17:30

Peak 15 Minutes: 16:45 - 17:00

1

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Interval Start Time	Laredo Street				Laredo Street				---				S Parking Lot Entrance				Total	Pedestrian Crossing			
	Northbound				Southbound				Eastbound				Westbound					North	South	East	West
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right					
16:30	0	0	21	11	0	15	17	0	---	---	---	---	0	1	0	0	65	0	0	0	0
16:45	0	0	19	8	0	7	34	0	---	---	---	---	0	4	0	1	73	0	0	0	0
17:00	0	0	22	0	0	2	14	0	---	---	---	---	0	2	0	1	41	0	0	0	0
17:15	0	0	19	1	0	0	16	0	---	---	---	---	0	0	0	0	36	0	0	0	0
17:30	0	0	13	0	0	1	15	0	---	---	---	---	0	1	0	1	31	0	0	0	0
17:45	0	0	14	0	0	1	13	0	---	---	---	---	0	1	0	1	30	0	0	0	0
Count Total	0	0	108	20	0	26	109	0	---	---	---	---	0	9	0	4	276	0	0	0	0
Peak Hour	0	0	81	20	0	24	81	0	---	---	---	---	0	7	0	2	215	0	0	0	0
Peak Hour Factor	0.79				0.64				---				0.45				---	---	---	---	---
Peak Hour % Trucks	0%	0%	1%	5%	0%	8%	1%	0%	---	---	---	---	0%	0%	0%	0%	2%	---	---	---	---

Peak Hour Inbound & Outbound Traffic

North Leg		South Leg		East Leg		West Leg	
In	Out	In	Out	In	Out	In	Out
105	83	101	88	9	44	0	0



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LAREDO ST / BELLEVIEW DR

Jan 28th, 2025

Peak Hour: 16:45 - 17:45

Peak 15 Minutes: 16:45 - 17:00

1

Interval Start Time	Laredo Street				Laredo Street				---				Bellevue Drive				Pedestrian Crossing				
	Northbound				Southbound				Eastbound				Westbound								
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	North	South	East	West
16:30	0	0	19	6	0	4	13	0	---	---	---	---	0	4	0	2	48	0	0	0	0
16:45	0	0	21	3	0	5	36	0	---	---	---	---	0	6	0	3	74	0	0	0	0
17:00	0	0	12	2	0	5	23	0	---	---	---	---	0	2	0	5	49	0	0	0	0
17:15	0	0	19	4	0	8	22	0	---	---	---	---	0	0	0	1	54	0	0	0	0
17:30	0	0	17	3	0	4	26	0	---	---	---	---	0	3	0	6	59	0	0	0	0
17:45	0	0	28	3	0	2	15	0	---	---	---	---	0	1	0	2	51	0	0	0	0
Count Total	0	0	116	21	0	28	135	0	---	---	---	---	0	16	0	19	335	0	0	0	0
Peak Hour	0	0	69	12	0	22	107	0	---	---	---	---	0	11	0	15	236	0	0	0	0
Peak Hour Factor	0.84				0.79				---				0.72				---	---	---	---	---
Peak Hour % Trucks	0%	0%	0%	0%	0%	0%	2%	0%	---	---	---	---	0%	0%	0%	0%	1%	---	---	---	---

Peak Hour Inbound & Outbound Traffic

North Leg		South Leg		East Leg		West Leg	
In	Out	In	Out	In	Out	In	Out
129	84	81	118	26	34	0	0

Daily Volumes

South Leg

Interval Start Time	Passenger Vehicles		Trucks Less Than 40' Long		Trucks Greater Than 40' Long		Total	
	NB	SB	NB	SB	NB	SB	NB	SB
00:00	1	3	0	0	0	0	1	3
00:15	2	0	0	0	0	0	2	0
00:30	0	0	0	0	0	0	0	0
00:45	0	0	0	0	0	0	0	0
	3	3	0	0	0	0	3	3
01:00	0	0	0	0	0	0	0	0
01:15	0	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	0	0
01:45	1	0	0	0	0	0	1	0
	1	0	0	0	0	0	1	0
02:00	0	2	0	0	0	0	0	2
02:15	0	0	0	0	0	0	0	0
02:30	1	1	0	0	0	0	1	1
02:45	0	0	0	0	0	0	0	0
	1	3	0	0	0	0	1	3
03:00	0	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0	0
03:30	0	1	0	0	0	0	0	1
03:45	0	0	0	0	0	0	0	0
	0	1	0	0	0	0	0	1
04:00	0	0	0	0	0	0	0	0
04:15	0	0	0	0	0	0	0	0
04:30	0	1	0	0	0	0	0	1
04:45	2	0	0	0	0	0	2	0
	2	1	0	0	0	0	2	1
05:00	1	1	0	0	0	0	1	1
05:15	0	0	0	0	0	0	0	0
05:30	3	2	0	0	0	0	3	2
05:45	4	1	1	1	0	0	5	2
	8	4	1	1	0	0	9	5
06:00	6	5	0	0	0	0	6	5
06:15	5	4	0	0	0	0	5	4
06:30	8	3	0	0	0	0	8	3
06:45	10	5	0	1	0	0	10	6
	29	17	0	1	0	0	29	18
07:00	13	10	2	0	0	0	15	10
07:15	21	21	0	0	0	0	21	21
07:30	60	81	2	3	0	0	62	84
07:45	99	104	1	0	0	0	100	104
	193	216	5	3	0	0	198	219
08:00	85	104	5	0	0	0	90	104
08:15	120	111	7	1	0	0	127	112
08:30	136	143	4	6	0	0	140	149
08:45	110	62	8	2	0	0	118	64
	451	420	24	9	0	0	475	429
09:00	24	27	0	1	0	0	24	28
09:15	25	28	0	2	0	0	25	30
09:30	30	51	3	0	0	0	33	51
09:45	60	67	0	0	0	0	60	67
	139	173	3	3	0	0	142	176
10:00	66	29	0	0	0	0	66	29
10:15	15	16	0	0	0	0	15	16
10:30	17	15	1	0	0	0	18	15
10:45	18	23	0	0	0	0	18	23
	116	83	1	0	0	0	117	83
11:00	22	18	0	0	0	0	22	18
11:15	12	31	1	1	0	0	13	32
11:30	69	36	0	0	0	0	69	36
11:45	56	35	0	1	0	0	56	36
	159	120	1	2	0	0	160	122
Count Total	1102	1041	35	19	0	0	1137	1060
Percent	97%	98%	3%	2%	0%	0%	---	



SMOKY HILL RD / LAREDO ST
Jan 28th, 2025
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South Leg

Interval Start Time	Passenger Vehicles		Trucks Less Than 40' Long		Trucks Greater Than 40' Long		Total	
	NB	SB	NB	SB	NB	SB	NB	SB
12:00	25	35	1	0	0	0	26	35
12:15	23	25	1	0	0	0	24	25
12:30	12	19	1	0	0	0	13	19
12:45	17	19	1	0	0	0	18	19
	77	98	4	0	0	0	81	98
13:00	16	24	0	0	0	0	16	24
13:15	16	24	0	0	0	0	16	24
13:30	33	63	0	0	0	0	33	63
13:45	33	63	0	0	0	0	33	63
	98	174	0	0	0	0	98	174
14:00	66	63	0	1	0	0	66	64
14:15	34	27	0	0	0	0	34	27
14:30	34	27	0	0	0	0	34	27
14:45	38	29	0	1	0	0	38	30
	172	146	0	2	0	0	172	148
15:00	20	57	0	3	0	0	20	60
15:15	20	57	0	3	0	0	20	60
15:30	45	122	0	8	0	0	45	130
15:45	200	123	13	4	0	0	213	127
	285	359	13	18	0	0	298	377
16:00	250	93	7	0	0	0	257	93
16:15	74	29	0	1	0	0	74	30
16:30	28	31	1	2	0	0	29	33
16:45	48	57	0	0	0	0	48	57
	400	210	8	3	0	0	408	213
17:00	80	49	2	0	0	0	82	49
17:15	52	43	0	0	0	0	52	43
17:30	34	41	0	0	0	0	34	41
17:45	38	36	0	0	0	0	38	36
	204	169	2	0	0	0	206	169
18:00	36	43	0	0	0	0	36	43
18:15	57	40	0	0	0	0	57	40
18:30	43	24	0	0	0	0	43	24
18:45	15	29	0	0	0	0	15	29
	151	136	0	0	0	0	151	136
19:00	19	15	0	0	0	0	19	15
19:15	5	12	0	0	0	0	5	12
19:30	9	22	0	0	0	0	9	22
19:45	24	11	0	0	0	0	24	11
	57	60	0	0	0	0	57	60
20:00	33	16	0	0	0	0	33	16
20:15	19	7	0	0	0	0	19	7
20:30	7	7	0	0	0	0	7	7
20:45	5	10	0	0	0	0	5	10
	64	40	0	0	0	0	64	40
21:00	3	4	0	0	0	0	3	4
21:15	30	4	0	0	0	0	30	4
21:30	8	3	0	0	0	0	8	3
21:45	1	3	0	0	0	0	1	3
	42	14	0	0	0	0	42	14
22:00	4	5	0	0	0	0	4	5
22:15	0	3	0	0	0	0	0	3
22:30	2	3	0	0	0	0	2	3
22:45	2	1	0	0	0	0	2	1
	8	12	0	0	0	0	8	12
23:00	0	2	0	0	0	0	0	2
23:15	2	0	0	0	0	0	2	0
23:30	0	3	0	0	0	0	0	3
23:45	2	2	0	0	0	0	2	2
	4	7	0	0	0	0	4	7
Count Total	1562	1425	27	23	0	0	1589	1448
Percent	98%	98%	2%	2%	0%	0%	---	

East Leg

Interval Start Time	Passenger Vehicles		Trucks Less Than 40' Long		Trucks Greater Than 40' Long		Total	
	WB	EB	WB	EB	WB	EB	WB	EB
00:00	21	15	0	0	1	0	22	15
00:15	7	26	1	0	0	0	8	26
00:30	4	11	0	0	0	1	4	12
00:45	9	16	0	0	0	0	9	16
	41	68	1	0	1	1	43	69
01:00	3	9	0	0	0	1	3	10
01:15	8	8	0	0	2	0	10	8
01:30	8	8	1	0	0	0	9	8
01:45	5	6	0	0	0	1	5	7
	24	31	1	0	2	2	27	33
02:00	5	13	0	0	0	0	5	13
02:15	6	8	0	0	0	0	6	8
02:30	13	9	0	0	1	0	14	9
02:45	8	8	0	0	0	0	8	8
	32	38	0	0	1	0	33	38
03:00	12	4	0	0	0	1	12	5
03:15	15	4	0	0	0	0	15	4
03:30	15	11	1	0	1	1	17	12
03:45	10	12	0	0	0	1	10	13
	52	31	1	0	1	3	54	34
04:00	17	11	0	0	1	0	18	11
04:15	28	9	0	1	0	0	28	10
04:30	36	6	0	1	0	1	36	8
04:45	40	20	1	0	0	1	41	21
	121	46	1	2	1	2	123	50
05:00	57	13	1	0	0	1	58	14
05:15	59	16	0	0	0	2	59	18
05:30	141	33	2	1	1	1	144	35
05:45	105	66	1	1	0	0	106	67
	362	128	4	2	1	4	367	134
06:00	152	38	0	0	0	0	152	38
06:15	158	59	6	0	0	1	164	60
06:30	185	69	8	1	1	0	194	70
06:45	218	87	15	3	0	1	233	91
	713	253	29	4	1	2	743	259
07:00	253	130	14	2	1	0	268	132
07:15	314	181	5	3	1	0	320	184
07:30	390	242	3	4	0	1	393	247
07:45	334	203	1	4	0	0	335	207
	1291	756	23	13	2	1	1316	770
08:00	365	220	2	7	1	0	368	227
08:15	375	184	3	10	0	0	378	194
08:30	334	184	2	10	0	0	336	194
08:45	289	167	3	19	0	0	292	186
	1363	755	10	46	1	0	1374	801
09:00	232	134	0	15	3	0	235	149
09:15	242	157	3	2	0	1	245	160
09:30	231	143	0	6	0	0	231	149
09:45	232	166	0	3	0	0	232	169
	937	600	3	26	3	1	943	627
10:00	222	166	2	1	1	1	225	168
10:15	186	133	4	3	0	1	190	137
10:30	180	134	5	5	2	0	187	139
10:45	192	148	4	2	0	0	196	150
	780	581	15	11	3	2	798	594
11:00	218	184	4	3	0	0	222	187
11:15	181	156	6	2	0	0	187	158
11:30	198	198	1	8	0	0	199	206
11:45	190	201	2	2	0	0	192	203
	787	739	13	15	0	0	800	754
Count Total	6503	4026	101	119	17	18	6621	4163
Percent	98%	97%	2%	3%	0%	0%	---	

East Leg

Interval Start Time	Passenger Vehicles		Trucks Less Than 40' Long		Trucks Greater Than 40' Long		Total	
	WB	EB	WB	EB	WB	EB	WB	EB
12:00	184	168	1	8	0	1	185	177
12:15	185	166	2	5	0	0	187	171
12:30	176	190	1	2	0	0	177	192
12:45	149	189	2	4	0	0	151	193
	694	713	6	19	0	1	700	733
13:00	190	199	1	0	0	0	191	199
13:15	190	199	1	0	0	0	191	199
13:30	223	238	3	3	1	1	227	242
13:45	223	238	3	3	1	1	227	242
	826	874	8	6	2	2	836	882
14:00	197	226	9	0	1	0	207	226
14:15	216	212	14	2	0	0	230	214
14:30	216	212	14	2	0	0	230	214
14:45	193	274	4	2	0	1	197	277
	822	924	41	6	1	1	864	931
15:00	242	255	6	1	0	0	248	256
15:15	242	255	6	1	0	0	248	256
15:30	234	258	5	0	0	0	239	258
15:45	279	340	3	6	0	0	282	346
	997	1108	20	8	0	0	1017	1116
16:00	294	403	4	6	0	0	298	409
16:15	233	284	3	7	1	0	237	291
16:30	259	294	8	7	0	0	267	301
16:45	239	297	0	7	1	0	240	304
	1025	1278	15	27	2	0	1042	1305
17:00	217	307	2	9	0	0	219	316
17:15	252	289	1	3	0	0	253	292
17:30	258	294	1	4	0	0	259	298
17:45	234	275	0	5	0	0	234	280
	961	1165	4	21	0	0	965	1186
18:00	217	295	0	4	0	0	217	299
18:15	200	295	1	3	0	0	201	298
18:30	162	261	0	0	0	0	162	261
18:45	157	290	1	2	0	1	158	293
	736	1141	2	9	0	1	738	1151
19:00	161	260	0	1	1	0	162	261
19:15	123	206	0	0	1	0	124	206
19:30	128	185	1	0	0	0	129	185
19:45	126	186	0	1	0	0	126	187
	538	837	1	2	2	0	541	839
20:00	101	170	0	1	2	0	103	171
20:15	84	135	0	0	1	0	85	135
20:30	107	126	1	0	0	0	108	126
20:45	80	107	0	1	0	0	80	108
	372	538	1	2	3	0	376	540
21:00	79	109	0	0	0	0	79	109
21:15	65	130	0	0	0	0	65	130
21:30	70	112	1	0	0	0	71	112
21:45	65	108	0	1	0	1	65	110
	279	459	1	1	0	1	280	461
22:00	50	78	0	2	0	0	50	80
22:15	46	69	0	1	0	1	46	71
22:30	47	61	1	0	0	0	48	61
22:45	27	61	0	0	0	0	27	61
	170	269	1	3	0	1	171	273
23:00	34	48	0	0	0	0	34	48
23:15	24	45	1	1	0	0	25	46
23:30	24	42	2	0	0	1	26	43
23:45	21	43	0	0	0	1	21	44
	103	178	3	1	0	2	106	181
Count Total	7523	9484	103	105	10	9	7636	9598
Percent	99%	99%	1%	1%	0%	0%	---	

West Leg

Interval Start Time	Passenger Vehicles		Trucks Less Than 40' Long		Trucks Greater Than 40' Long		Total	
	EB	WB	EB	WB	EB	WB	EB	WB
00:00	16	20	0	0	0	1	16	21
00:15	24	7	0	1	0	0	24	8
00:30	11	4	0	0	1	0	12	4
00:45	16	9	0	0	0	0	16	9
	67	40	0	1	1	1	68	42
01:00	9	3	0	0	1	0	10	3
01:15	8	8	0	0	0	2	8	10
01:30	8	8	0	1	0	0	8	9
01:45	6	6	0	0	1	0	7	6
	31	25	0	1	2	2	33	28
02:00	15	5	0	0	0	0	15	5
02:15	8	6	0	0	0	0	8	6
02:30	8	12	0	0	0	1	8	13
02:45	8	8	0	0	0	0	8	8
	39	31	0	0	0	1	39	32
03:00	4	12	0	0	1	0	5	12
03:15	4	15	0	0	0	0	4	15
03:30	11	14	0	1	1	1	12	16
03:45	12	10	0	0	1	0	13	10
	31	51	0	1	3	1	34	53
04:00	11	17	0	0	0	1	11	18
04:15	9	28	1	0	0	0	10	28
04:30	6	35	1	0	1	0	8	35
04:45	19	41	0	1	1	0	20	42
	45	121	2	1	2	1	49	123
05:00	12	56	0	1	1	0	13	57
05:15	16	59	0	0	2	0	18	59
05:30	32	141	1	2	1	1	34	144
05:45	65	107	0	0	0	0	65	107
	125	363	1	3	4	1	130	367
06:00	34	149	0	0	0	0	34	149
06:15	59	159	0	6	1	0	60	165
06:30	65	186	1	8	0	1	66	195
06:45	80	216	4	15	1	0	85	231
	238	710	5	29	2	1	245	740
07:00	126	252	0	14	0	1	126	267
07:15	177	310	3	5	0	1	180	316
07:30	245	372	2	0	1	0	248	372
07:45	236	362	4	2	0	0	240	364
	784	1296	9	21	1	2	794	1319
08:00	241	367	4	4	0	1	245	372
08:15	186	386	5	4	0	0	191	390
08:30	204	347	12	2	0	0	216	349
08:45	150	320	12	2	0	0	162	322
	781	1420	33	12	0	1	814	1433
09:00	135	230	16	0	0	3	151	233
09:15	154	236	2	1	1	0	157	237
09:30	148	215	3	0	0	0	151	215
09:45	151	210	3	0	0	0	154	210
	588	891	24	1	1	3	613	895
10:00	126	219	1	2	1	1	128	222
10:15	132	184	3	4	1	0	136	188
10:30	126	174	4	5	0	2	130	181
10:45	145	184	2	4	0	0	147	188
	529	761	10	15	2	3	541	779
11:00	176	214	3	4	0	0	179	218
11:15	160	166	1	5	0	0	161	171
11:30	169	202	8	1	0	0	177	203
11:45	166	176	2	1	0	0	168	177
	671	758	14	11	0	0	685	769
Count Total	3929	6467	98	96	18	17	4045	6580
Percent	97%	98%	2%	1%	0%	0%	---	

West Leg

Interval Start Time	Passenger Vehicles		Trucks Less Than 40' Long		Trucks Greater Than 40' Long		Total	
	EB	WB	EB	WB	EB	WB	EB	WB
12:00	167	173	7	1	1	0	175	174
12:15	158	175	4	2	0	0	162	177
12:30	192	171	2	2	0	0	194	173
12:45	183	141	3	2	0	0	186	143
	700	660	16	7	1	0	717	667
13:00	195	178	0	1	0	0	195	179
13:15	195	178	0	1	0	0	195	179
13:30	224	179	3	3	1	1	228	183
13:45	224	179	3	3	1	1	228	183
	838	714	6	8	2	2	846	724
14:00	208	182	0	8	0	1	208	191
14:15	206	217	2	14	0	0	208	231
14:30	206	217	2	14	0	0	208	231
14:45	256	184	3	4	1	0	260	188
	876	800	7	40	1	1	884	841
15:00	267	217	3	5	0	0	270	222
15:15	267	217	3	5	0	0	270	222
15:30	290	189	4	1	0	0	294	190
15:45	292	308	2	8	0	0	294	316
	1116	931	12	19	0	0	1128	950
16:00	323	371	4	9	0	0	327	380
16:15	266	260	8	3	0	1	274	264
16:30	283	245	6	6	0	0	289	251
16:45	280	213	7	0	0	1	287	214
	1152	1089	25	18	0	2	1177	1109
17:00	284	225	8	3	0	0	292	228
17:15	267	239	3	1	0	0	270	240
17:30	282	239	4	1	0	0	286	240
17:45	255	216	5	0	0	0	260	216
	1088	919	20	5	0	0	1108	924
18:00	274	189	4	0	0	0	278	189
18:15	260	182	3	1	0	0	263	183
18:30	238	158	0	0	0	0	238	158
18:45	288	141	2	1	1	0	291	142
	1060	670	9	2	1	0	1070	672
19:00	252	157	1	0	0	1	253	158
19:15	209	119	0	0	0	1	209	120
19:30	184	114	0	1	0	0	184	115
19:45	169	122	1	0	0	0	170	122
	814	512	2	1	0	2	816	515
20:00	145	93	1	0	0	2	146	95
20:15	123	84	0	0	0	1	123	85
20:30	122	103	0	1	0	0	122	104
20:45	108	76	1	0	0	0	109	76
	498	356	2	1	0	3	500	360
21:00	106	75	0	0	0	0	106	75
21:15	107	68	0	0	0	0	107	68
21:30	106	69	0	1	0	0	106	70
21:45	107	62	1	0	1	0	109	62
	426	274	1	1	1	0	428	275
22:00	76	47	2	0	0	0	78	47
22:15	69	43	1	0	1	0	71	43
22:30	61	46	0	1	0	0	61	47
22:45	62	29	0	0	0	0	62	29
	268	165	3	1	1	0	272	166
23:00	49	33	0	0	0	0	49	33
23:15	43	24	1	1	0	0	44	25
23:30	42	21	0	2	1	0	43	23
23:45	44	22	0	0	1	0	45	22
	178	100	1	3	2	0	181	103
Count Total	9014	7190	104	106	9	10	9127	7306
Percent	99%	98%	1%	1%	0%	0%	---	

Appendix D

Traffic Signal Warrant Study



Traffic Signal Warrant Analysis

Project Name	Laredo Middle School TIS
Project/File #	Turner & Townsend
Scenario	Year 2027 Total - AM Peak

Intersection Information	
Major Street Name	Laredo Street
North/South or East/West	N/S
Speed Limit	35 mph or less
# of Approach Lanes	1
% of Right Turn Traffic to Include	100%
Minor Street Name	School Access
# of Approach Lanes	1
% of Right Turn Traffic to Include	50%
Isolated Community < 10,000 pop	No

What Additional Warrants to Consider?	
Warrant 3, Peak Hour (A - Vol. and Delay)	Yes
Warrant 4, Pedestrian Volume	No
Warrant 5, School Crossing	No
Warrant 6, Coordinated Signal System	No
Warrant 7, Crash Experience	No
Warrant 8, Roadway Network	No
Warrant 9, Intersection Near a Grade Crossing	No
All-Way Stop Warrant	No

Sustainable Traffic Solutions, Inc.



Traffic Signal Warrant Analysis

Laredo Street (Major Street) Volume

Northbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM				
8 - 9 AM	0	253	130	
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM				
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			383	0

Southbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM				
8 - 9 AM	196	90		
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM				
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			286	0

School Access (Minor Street) Volume

Eastbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM				
8 - 9 AM				
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM				
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			0	0

Westbound Volume by Hour				
Time	Left Turns	Through	Right Turns	Peds/Bikes
12 - 1 AM				
1 - 2 AM				
2 - 3 AM				
3 - 4 AM				
4 - 5 AM				
5 - 6 AM				
6 - 7 AM				
7 - 8 AM				
8 - 9 AM	111		166	
9 - 10 AM				
10 - 11 AM				
11 - 12 PM				
12 - 1 PM				
1 - 2 PM				
2 - 3 PM				
3 - 4 PM				
4 - 5 PM				
5 - 6 PM				
6 - 7 PM				
7 - 8 PM				
8 - 9 PM				
9 - 10 PM				
10 - 11 PM				
11 - 12 AM				
Total Vehicles (unadjusted)			277	0



Traffic Signal Warrant Analysis

Additional Inputs for Warrants 3 to 9 and the Multi-Way Stop Warrants

Warrant 3: Peak Hour Delay Additional Information	
T-intersection or 4-legged?	T
Peak Hour Reviewed?	AM Peak
Laredo Street (Major Street) Data	
Combined Approach Volume	669
School Access (Minor Street) Data	
High Volume Side Volume	277
High Volume Side Average Delay (Sec.)	392.21
High Volume Side # of Approach Lanes	1
Low Volume Side Volume (leave blank if T)	0

Warrant 4: Pedestrian Volume Additional Information	
Include Right Turn Reduction for Vehicular Volume?	No
300 feet or more to nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross?	No
If no, will a traffic control signal restrict the progressive movement of traffic?*	N/A
15th-percentile crossing speed of pedestrians less than 3.5 feet per second?*	No
If yes, then percent reduction to apply to crossing volume? (up to 50%)	N/A

* Include supporting documentation of no progressive movement impact.

** Not common. Include supporting documentation of low crossing speed.

Warrant 6: Coordinated Signal System	
One-way or Two-way Street?	Two-Way
Adjacent traffic control signals do not provide the necessary degree of platooning, but will collectively provide a progressive operation with the proposed traffic control signal?	No
Resultant spacing of traffic control signals 1,000 feet or more?	No

Warrant 7: Crash Experience	
Number of reportable crashes (<u>types susceptible to correction by a traffic control signal</u>) within a 12-month period?*	4 or less
Adequate trial of alternatives with satisfactory observance and enforcement failed to reduce crash frequency?*	No
Include Right Turn Reduction for Vehicular Volume?	No

* May need to include supporting documentation of crash details.

** May need to include supporting documentation of alternative trail(s) and results.

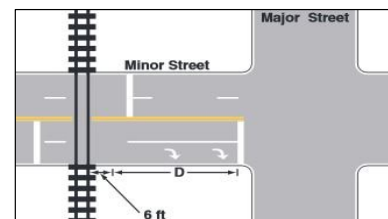
Warrant 9: Intersection Near a Grade Crossing	
Tracks cross which School Access approach?	Southbound
Consideration given to other alternatives/trial of alternative failed to alleviate the safety concerns?*	No
Distance between STOP or YIELD controlled approach and center of track nearest to the intersection within 140 feet?	No
Clear storage distance (Distance D) between the tracks and the intersection? (See Below)	70 feet
Number of approach lanes at the crossing?	2 or more
Rail traffic per day?	3-5
Percentage of high-occupancy buses?*	0%
Percentage of Tractor-Trailer Trucks?	7.6%-12.5%

* Alternatives to consider or try should include:

- Providing additional pavement that would enable vehicles to clear the track or provide space for an evasive maneuver.

- Reassigning the stop controls at the intersection to make the approach across the track non-stopping.

** High-occupancy is defined as a bus occupied by at least 20 people.



Warrant 5: School Crossing	
Schoolchildren (elementary through high school) crossing the major street (Laredo Consideration given to other remedial measures (warning signs/flashers, school speed zones, school crossing guards, or a grade-separated crossing)?	No
300 feet or more to nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross?	No
If no, will a traffic control signal restrict the progressive movement of traffic?*	N/A
Minimum of 20 schoolchildren crossing during the highest crossing hour? Engineering Study completed showing the number of adequate gaps in the traffic stream during the period when schoolchildren are using the crossing is less than the number of minutes in the same period?*	No

* Include supporting documentation of no progressive movement impact.

** May need to include supporting documentation of inadequate gaps in traffic.

Warrant 8: Roadway Network	
Common intersection of two major routes?*	No
Projected entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday?	No
5-Year projected traffic volumes meet one or more of Warrants 1, 2, and 3 during an average weekday?	No
Total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday)?	No

* Major Route defined as:

- Part of the street or highway system that serves as the principal roadway network for through traffic flow.
- Rural or suburban highways outside, entering, or traversing a city.
- Appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.

Multi-Way Stop Warrant Additional Information	
Traffic control signal warranted & justified with existing traffic?	No
Number of <u>correctable</u> crashes* in 12-month period?	4
Peak Hour high volume approach average delay (Sec.)	392.21

* Crashes include right-turn and left-turn collisions as well as right-angle collisions.



Traffic Signal Warrant Analysis

Warrants 1 - 3 (Volume Warrants)

Project Name	Laredo Middle School TIS
Project/File #	Turner & Townsend
Scenario	Year 2027 Total - AM Peak

Intersection Information			
Major Street (N/S Road)	Laredo Street	Minor Street (E/W Road)	School Access
Analyzed with	1 approach lane	Analyzed with	1 Approach Lane
Total Approach Volume	669 vehicles	Total Approach Volume	277 vehicles
Total Ped/Bike Volume	0 crossings	Total Ped/Bike Volume	0 crossings
Right turn reduction of	0 percent applied	Right turn reduction of	50 percent applied

No high speed or isolated community reduction applied to the Volume Warrant thresholds.

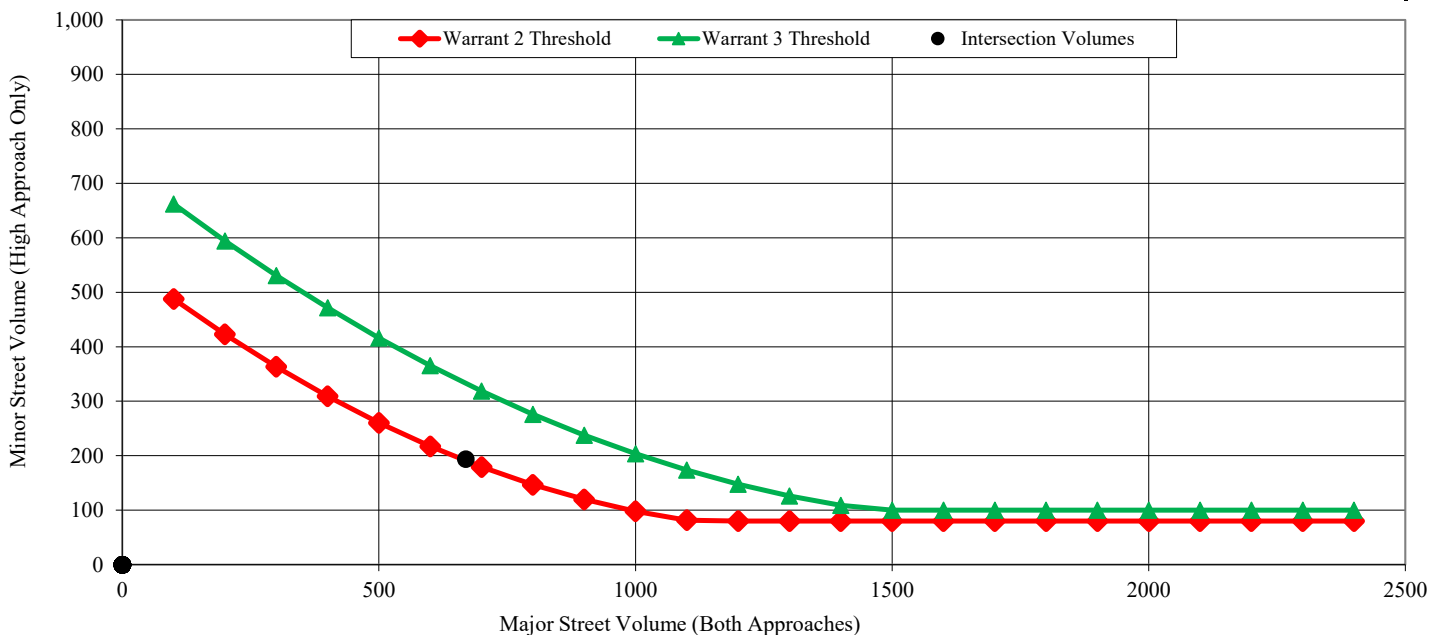
Warrant 1, Eight Hour Vehicular Volume			
	Condition A	Condition B	Condition A+B*
Condition Satisfied?	Not Satisfied	Not Satisfied	Not Satisfied
Required values reached for	1 hour	0 hours	1 (Cond. A) & 1 (Cond. B)
Criteria - Major Street (veh/hr)	500	750	400 (Cond. A) & 600 (Cond. B)
Criteria - Minor Street (veh/hr)	150	75	120 (Cond. A) & 60 (Cond. B)

* Should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.

Warrant 2, Four Hour Vehicular Volume	
Condition Satisfied?	Not Satisfied
Required values reached for	1 hour
Criteria	See Figure Below

Warrant 3, Peak Hour Vehicular Volume		
	Condition A	Condition B
Condition Satisfied?	Satisfied	Not Satisfied
Required values reached for	946 total, 277 minor, 30.2 delay	0 hours
Criteria - Total Approach Volume (veh in one hour)	650	See Figure Below
Criteria - Minor Street High Side Volume (veh in one hour)	100	
Criteria - Minor Street High Side Delay (veh-hrs)	4	

Figure 4C-1 (Warrant 2) & Figure 4C-3 (Warrant 3)



Appendix E

VISTRO Analysis Results

Morning Peak Hour

Laredo Middle School TIS

Vistro File: C:\...\AM.vistro
Report File: C:\...\2025 AM.pdf

Scenario 1 2025 AM
3/20/2025

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Smoky Hill Rd/Laredo St	Signalized	HCM 7th Edition	NB Left	0.428	14.6	B
2	Laredo St/Buffalo Way	Signalized	HCM 7th Edition	NB Left	0.428	19.0	B
3	Laredo St/North Parking Lot	Two-way stop	HCM 7th Edition	WB Left	0.095	40.6	E
4	Laredo St/School Exit	Two-way stop	HCM 7th Edition	WB Left	0.582	35.8	E
5	Laredo St/School Entrance	Two-way stop	HCM 7th Edition	SB Left	0.246	10.8	B
6	Laredo St/Bellevue Dr	Two-way stop	HCM 7th Edition	WB Left	0.112	21.8	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Smoky Hill Rd/Laredo St

Control Type:	Signalized	Delay (sec / veh):	14.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.428

Intersection Setup

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↑↑		↵↑↑↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	288.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Base Volume Input [veh/h]	267	208	592	222	207	1166
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	104	0	111	0	0
Total Hourly Volume [veh/h]	267	104	592	111	207	1166
Peak Hour Factor	0.8500	0.8500	0.8300	0.8300	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	79	31	178	33	57	320
Total Analysis Volume [veh/h]	314	122	713	134	227	1281
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	33	0	31	0	25	60
Amber [s]	4.0	0.0	4.0	0.0	3.0	4.0
All red [s]	2.0	0.0	2.0	0.0	1.0	2.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	0.0	4.0	0.0	2.0	4.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	39.0	0.0	37.0	0.0	29.0	66.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
C, Calculated Cycle Length [s]	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	21.3	21.3	59.9	59.9	71.7	71.7
g / C, Green / Cycle	0.20	0.20	0.57	0.57	0.68	0.68
(v / s)_i Volume / Saturation Flow Rate	0.18	0.08	0.16	0.16	0.28	0.25
s, saturation flow rate [veh/h]	1781	1589	3560	1725	805	5094
c, Capacity [veh/h]	362	323	2031	984	593	3477
d1, Uniform Delay [s]	40.47	36.11	11.51	11.58	6.71	7.07
k, delay calibration	0.11	0.11	0.50	0.50	0.32	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.39	0.73	0.34	0.73	1.19	0.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.38	0.28	0.29	0.38	0.37
d, Delay for Lane Group [s/veh]	46.86	36.84	11.86	12.32	7.90	7.37
Lane Group LOS	D	D	B	B	A	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	8.40	2.76	3.33	3.45	1.85	3.73
50th-Percentile Queue Length [ft/ln]	210.08	68.89	83.20	86.30	46.34	93.32
95th-Percentile Queue Length [veh/ln]	13.16	4.96	5.99	6.21	3.34	6.72
95th-Percentile Queue Length [ft/ln]	328.94	124.00	149.75	155.33	83.41	167.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	46.86	36.84	11.95	12.32	7.90	7.37
Movement LOS	D	D	B	B	A	A
d_A, Approach Delay [s/veh]	44.06		12.01		7.45	
Approach LOS	D		B		A	
d_I, Intersection Delay [s/veh]	14.55					
Intersection LOS	B					
Intersection V/C	0.428					

Emissions

Vehicle Miles Traveled [mph]	58.54	22.74	52.30	26.15	21.72	122.54
Stops [stops/h]	288.11	94.48	228.20	118.35	63.55	383.94
Fuel consumption [US gal/h]	7.00	2.37	4.78	2.44	1.61	9.09
CO [g/h]	489.01	165.86	333.86	170.43	112.53	635.20
NOx [g/h]	95.14	32.27	64.96	33.16	21.89	123.59
VOC [g/h]	113.33	38.44	77.37	39.50	26.08	147.21

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	629		590		1143	
d_b, Bicycle Delay [s]	24.69		26.08		9.64	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.087		2.389	
Bicycle LOS	A		B		B	

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Laredo St/Bufalo Way

Control Type:	Signalized	Delay (sec / veh):	19.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.428

Intersection Setup

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↵		↵↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Base Volume Input [veh/h]	266	226	244	242	77	215
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	113	0	121	0	0
Total Hourly Volume [veh/h]	266	113	244	121	77	215
Peak Hour Factor	0.6600	0.6600	0.8000	0.8000	0.5700	0.5700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	101	43	76	38	34	94
Total Analysis Volume [veh/h]	403	171	305	151	135	377
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	41	0	51	0	48	51
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	0.0	14.0	0.0	9.0	14.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	0	6	0	6	6
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	93	93	93	93	93	93
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	24.4	24.4	51.0	51.0	60.8	60.8
g / C, Green / Cycle	0.26	0.26	0.55	0.55	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.23	0.11	0.16	0.09	0.13	0.20
s, saturation flow rate [veh/h]	1781	1589	1870	1589	1038	1870
c, Capacity [veh/h]	467	417	1022	868	708	1219
d1, Uniform Delay [s]	32.83	28.47	11.48	10.62	6.12	7.08
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.85	0.65	0.75	0.44	0.13	0.66
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.41	0.30	0.17	0.19	0.31
d, Delay for Lane Group [s/veh]	37.69	29.11	12.23	11.05	6.25	7.74
Lane Group LOS	D	C	B	B	A	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	9.09	3.19	3.44	1.58	0.92	3.11
50th-Percentile Queue Length [ft/ln]	227.21	79.67	85.99	39.57	22.99	77.84
95th-Percentile Queue Length [veh/ln]	14.03	5.74	6.19	2.85	1.66	5.60
95th-Percentile Queue Length [ft/ln]	350.81	143.40	154.78	71.22	41.38	140.11

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.69	29.11	12.23	11.05	6.25	7.74
Movement LOS	D	C	B	B	A	A
d_A, Approach Delay [s/veh]	35.13		11.84		7.34	
Approach LOS	D		B		A	
d_I, Intersection Delay [s/veh]	19.02					
Intersection LOS	B					
Intersection V/C	0.428					

Emissions

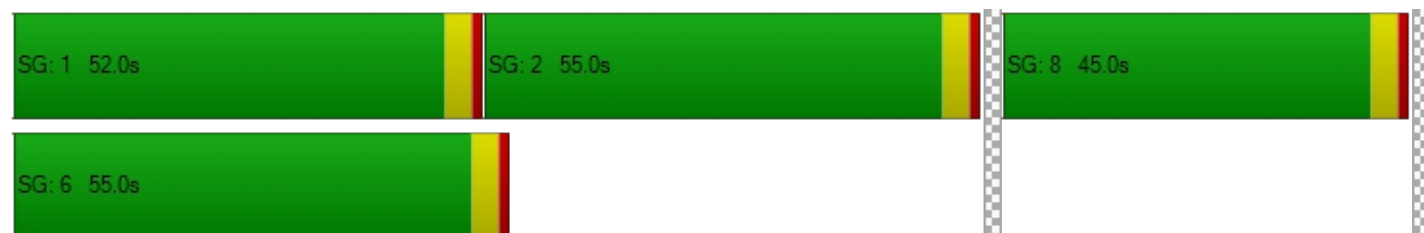
Vehicle Miles Traveled [mph]	10.31	4.38	26.42	13.08	25.17	70.28
Stops [stops/h]	350.81	123.01	132.77	61.09	35.49	120.18
Fuel consumption [US gal/h]	5.45	1.87	2.58	1.22	1.40	4.15
CO [g/h]	381.18	130.91	180.36	84.98	98.12	290.16
NOx [g/h]	74.16	25.47	35.09	16.53	19.09	56.45
VOC [g/h]	88.34	30.34	41.80	19.69	22.74	67.25

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	879		1094		1094	
d_b, Bicycle Delay [s]	14.64		9.58		9.58	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.512		2.404	
Bicycle LOS	A		B		B	

Sequence




Ring 1	1	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Laredo St/North Parking Lot

Control Type:	Two-way stop	Delay (sec / veh):	40.6
Analysis Method:	HCM 7th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.095

Intersection Setup

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Base Volume Input [veh/h]	431	12	76	247	6	76
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	431	12	76	247	6	76
Peak Hour Factor	0.5800	0.5800	0.6400	0.6400	0.4700	0.4700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	186	5	30	96	3	40
Total Analysis Volume [veh/h]	743	21	119	386	13	162
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.14	0.00	0.09	0.40
d_M, Delay for Movement [s/veh]	0.00	0.00	9.93	0.00	40.56	23.12
Movement LOS	A	A	A	A	E	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.49	0.00	2.59	2.59
95th-Percentile Queue Length [ft/ln]	0.00	0.00	12.16	0.00	64.79	64.79
d_A, Approach Delay [s/veh]	0.00		2.34		24.42	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	3.78					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 4: Laredo St/School Exit

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 35.8
Level Of Service: E
Volume to Capacity (v/c): 0.582

Intersection Setup

Name	South Laredo Street		South Laredo Street		School Exit	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑		↑		↶↷	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		School Exit	
Base Volume Input [veh/h]	256	0	0	247	99	183
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	256	0	0	247	99	183
Peak Hour Factor	0.3700	0.8500	0.8500	0.7800	0.6400	0.6400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	173	0	0	79	39	71
Total Analysis Volume [veh/h]	692	0	0	317	155	286
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0



Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.58	0.64
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	35.79	26.65
Movement LOS	A			A	E	D
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	3.37	4.44
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	84.16	110.89
d_A, Approach Delay [s/veh]	0.00		0.00		29.86	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	9.08					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 5: Laredo St/School Entrance

Control Type:	Two-way stop	Delay (sec / veh):	10.8
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.246

Intersection Setup

Name	South Laredo Street		South Laredo Street		South Parking Lot	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		South Parking Lot	
Base Volume Input [veh/h]	253	138	160	189	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	253	138	160	189	0	1
Peak Hour Factor	0.4900	0.4900	0.7900	0.7900	0.2500	0.2500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	129	70	51	60	0	1
Total Analysis Volume [veh/h]	516	282	203	239	0	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.01	0.00	0.25	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	10.79	0.00	0.00	0.00
Movement LOS	A	A	B	A		
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.97	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	24.20	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		4.95		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.77					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 6: Laredo St/Belleview Dr

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 21.8
Level Of Service: C
Volume to Capacity (v/c): 0.112

Intersection Setup

Name	South Laredo Street		South Laredo Street		East Belleview Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		East Belleview Drive	
Base Volume Input [veh/h]	357	7	10	204	19	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	357	7	10	204	19	15
Peak Hour Factor	0.4700	0.4700	0.8100	0.8100	0.6700	0.6700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	190	4	3	63	7	6
Total Analysis Volume [veh/h]	760	15	12	252	28	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.11	0.05
d_M, Delay for Movement [s/veh]	0.00	0.00	9.29	0.00	21.81	16.35
Movement LOS	A	A	A	A	C	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.02	0.59	0.59
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.50	0.50	14.75	14.75
d_A, Approach Delay [s/veh]	0.00		0.42		19.41	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.99					
Intersection LOS	C					

Laredo Middle School TIS

Vistro File: C:\...\AM.vistro

Scenario 2 2027 Back AM

Report File: C:\...\2027 Back AM.pdf

3/20/2025

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Smoky Hill Rd/Laredo St	Signalized	HCM 7th Edition	NB Left	0.345	8.7	A
2	Laredo St/Buffalo Way	Signalized	HCM 7th Edition	NB Left	0.351	26.4	C
3	Laredo St/North Parking Lot	Two-way stop	HCM 7th Edition	NB Thru	0.004	0.0	A
4	Laredo St/School Exit	Two-way stop	HCM 7th Edition	NB Thru	0.007	0.0	A
5	Laredo St/School Entrance	Two-way stop	HCM 7th Edition	NB Thru	0.005	0.0	A
6	Laredo St/Bellevue Dr	Two-way stop	HCM 7th Edition	WB Left	0.061	13.5	B




V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Smoky Hill Rd/Laredo St

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 8.7
Level Of Service: A
Volume to Capacity (v/c): 0.345

Intersection Setup

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	288.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Base Volume Input [veh/h]	267	208	592	222	207	1166
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0100	1.0000	1.0000	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-130	-130	0	-118	-118	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	39	0	52	0	0
Total Hourly Volume [veh/h]	137	39	598	52	89	1178
Peak Hour Factor	0.8500	0.8500	0.8300	0.8300	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	40	11	180	16	24	324
Total Analysis Volume [veh/h]	161	46	720	63	98	1295
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	33	0	31	0	25	60
Amber [s]	4.0	0.0	4.0	0.0	3.0	4.0
All red [s]	2.0	0.0	2.0	0.0	1.0	2.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	0.0	4.0	0.0	2.0	4.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	39.0	0.0	37.0	0.0	29.0	66.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
C, Calculated Cycle Length [s]	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	11.9	11.9	72.3	72.3	81.1	81.1
g / C, Green / Cycle	0.11	0.11	0.69	0.69	0.77	0.77
(v / s)_i Volume / Saturation Flow Rate	0.09	0.03	0.15	0.15	0.13	0.25
s, saturation flow rate [veh/h]	1781	1589	3560	1794	782	5094
c, Capacity [veh/h]	203	181	2450	1234	664	3932
d1, Uniform Delay [s]	45.33	42.46	5.98	5.98	3.12	3.66
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.89	0.73	0.20	0.39	0.10	0.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.25	0.21	0.21	0.15	0.33
d, Delay for Lane Group [s/veh]	52.22	43.19	6.18	6.37	3.22	3.89
Lane Group LOS	D	D	A	A	A	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.45	1.12	1.96	2.03	0.41	2.26
50th-Percentile Queue Length [ft/ln]	111.33	28.12	49.06	50.65	10.23	56.51
95th-Percentile Queue Length [veh/ln]	7.91	2.02	3.53	3.65	0.74	4.07
95th-Percentile Queue Length [ft/ln]	197.86	50.61	88.30	91.18	18.41	101.71

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	52.22	43.19	6.23	6.37	3.22	3.89
Movement LOS	D	D	A	A	A	A
d_A, Approach Delay [s/veh]	50.21		6.24		3.84	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	8.66					
Intersection LOS	A					
Intersection V/C	0.345					

Emissions

Vehicle Miles Traveled [mph]	30.01	8.58	48.35	24.18	9.37	123.88
Stops [stops/h]	152.69	38.56	134.56	69.47	14.02	232.49
Fuel consumption [US gal/h]	3.79	0.97	3.39	1.72	0.53	7.41
CO [g/h]	264.91	67.83	237.00	120.03	36.88	517.90
NOx [g/h]	51.54	13.20	46.11	23.35	7.18	100.76
VOC [g/h]	61.39	15.72	54.93	27.82	8.55	120.03

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	629		590		1143	
d_b, Bicycle Delay [s]	24.69		26.08		9.64	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.019		2.326	
Bicycle LOS	A		B		B	

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Laredo St/Bufalo Way

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 26.4
Level Of Service: C
Volume to Capacity (v/c): 0.351

Intersection Setup

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↵		↵↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Base Volume Input [veh/h]	266	226	244	242	77	215
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	-259	0	0	-236
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	113	0	121	0	0
Total Hourly Volume [veh/h]	266	113	0	121	77	0
Peak Hour Factor	0.6600	0.6600	0.8000	0.8000	0.5700	0.5700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	101	43	0	38	34	0
Total Analysis Volume [veh/h]	403	171	0	151	135	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	41	0	51	0	48	51
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	0.0	14.0	0.0	9.0	14.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	0	6	0	6	6
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	93	93	93	93	93	93
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	24.4	24.4	51.0	51.0	60.8	60.8
g / C, Green / Cycle	0.26	0.26	0.55	0.55	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.23	0.11	0.00	0.09	0.10	0.00
s, saturation flow rate [veh/h]	1781	1589	1870	1589	1306	1870
c, Capacity [veh/h]	467	417	1022	868	966	1219
d1, Uniform Delay [s]	32.83	28.47	0.00	10.62	6.12	0.00
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.85	0.65	0.00	0.44	0.07	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.41	0.00	0.17	0.14	0.00
d, Delay for Lane Group [s/veh]	37.69	29.11	0.00	11.05	6.18	0.00
Lane Group LOS	D	C	A	B	A	A
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	9.09	3.19	0.00	1.58	0.91	0.00
50th-Percentile Queue Length [ft/ln]	227.21	79.67	0.00	39.57	22.79	0.00
95th-Percentile Queue Length [veh/ln]	14.03	5.74	0.00	2.85	1.64	0.00
95th-Percentile Queue Length [ft/ln]	350.81	143.40	0.00	71.22	41.02	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.69	29.11	0.00	11.05	6.18	0.00
Movement LOS	D	C	A	B	A	A
d_A, Approach Delay [s/veh]	35.13		11.05		6.18	
Approach LOS	D		B		A	
d_I, Intersection Delay [s/veh]	26.36					
Intersection LOS	C					
Intersection V/C	0.351					

Emissions

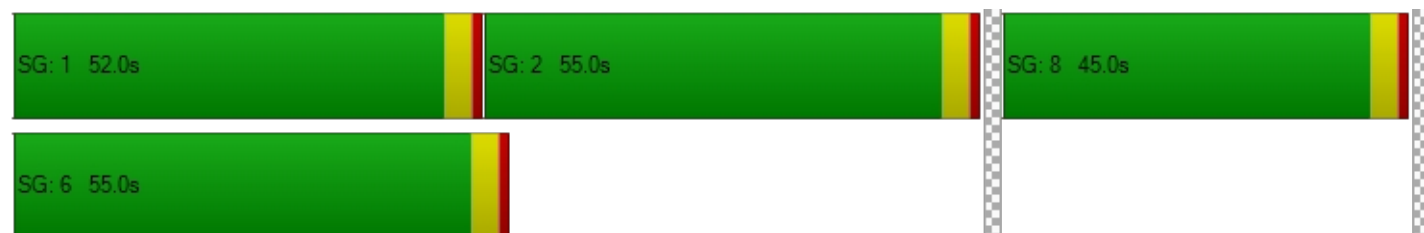
Vehicle Miles Traveled [mph]	10.31	4.38	0.00	13.08	25.17	0.00
Stops [stops/h]	350.81	123.01	0.00	61.09	35.19	0.00
Fuel consumption [US gal/h]	5.45	1.87	0.00	1.22	1.40	0.00
CO [g/h]	381.18	130.91	0.00	84.98	97.88	0.00
NOx [g/h]	74.16	25.47	0.00	16.53	19.04	0.00
VOC [g/h]	88.34	30.34	0.00	19.69	22.68	0.00

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	879		1094		1094	
d_b, Bicycle Delay [s]	14.64		9.58		9.58	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.008		1.782	
Bicycle LOS	A		B		A	

Sequence




Ring 1	1	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Laredo St/North Parking Lot

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Base Volume Input [veh/h]	431	12	76	247	6	76
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-183	-12	-76	-160	-6	-76
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	248	0	0	87	0	0
Peak Hour Factor	0.5800	0.5800	0.6400	0.6400	0.4700	0.4700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	107	0	0	34	0	0
Total Analysis Volume [veh/h]	428	0	0	136	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.18	0.00	12.39	10.74
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		11.57	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 4: Laredo St/School Exit

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

Intersection Setup

Name	South Laredo Street		South Laredo Street		School Exit	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑		↑		↶↷	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		School Exit	
Base Volume Input [veh/h]	256	0	0	247	99	183
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-12	0	0	-166	-99	-183
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	244	0	0	81	0	0
Peak Hour Factor	0.3700	0.8500	0.8500	0.7800	0.6400	0.6400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	165	0	0	26	0	0
Total Analysis Volume [veh/h]	659	0	0	104	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0



Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	14.67	12.76
Movement LOS	A			A	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		13.72	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 5: Laredo St/School Entrance

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	South Laredo Street		South Laredo Street		South Parking Lot	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		South Parking Lot	
Base Volume Input [veh/h]	253	138	160	189	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-12	-138	-160	-105	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	241	0	0	84	0	1
Peak Hour Factor	0.4900	0.4900	0.7900	0.7900	0.2500	0.2500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	123	0	0	27	0	1
Total Analysis Volume [veh/h]	492	0	0	106	0	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.36	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Laredo St/Belleview Dr

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 13.5
Level Of Service: B
Volume to Capacity (v/c): 0.061

Intersection Setup

Name	South Laredo Street		South Laredo Street		East Belleview Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		East Belleview Drive	
Base Volume Input [veh/h]	357	7	10	204	19	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-150	0	0	-105	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	207	7	10	99	19	15
Peak Hour Factor	0.4700	0.4700	0.8100	0.8100	0.6700	0.6700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	110	4	3	31	7	6
Total Analysis Volume [veh/h]	440	15	12	122	28	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.06	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	8.27	0.00	13.52	11.63
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.02	0.32	0.32
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.50	0.50	7.97	7.97
d_A, Approach Delay [s/veh]	0.00		0.74		12.69	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.15					
Intersection LOS	B					

Laredo Middle School TIS

Vistro File: C:\...\AM.vistro

Scenario 3 2027 Total AM

Report File: C:\...\2027 Total AM.pdf

3/21/2025

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Smoky Hill Rd/Laredo St	Signalized	HCM 7th Edition	NB Left	0.401	12.6	B
2	Laredo St/Buffalo Way	Signalized	HCM 7th Edition	NB Left	0.374	20.1	C
3	Laredo St/North Parking Lot	Two-way stop	HCM 7th Edition	WB Left	0.043	23.2	C
6	Laredo St/Belleview Dr	Two-way stop	HCM 7th Edition	WB Left	0.109	21.2	C
7	Laredo St/School Access	Two-way stop	HCM 7th Edition	WB Left	1.621	367.7	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Smoky Hill Rd/Laredo St

Control Type:	Signalized	Delay (sec / veh):	12.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.401

Intersection Setup

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↑↑		↵↑↑↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	288.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Base Volume Input [veh/h]	267	208	592	222	207	1166
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0100	1.0000	1.0000	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	86	86	0	101	101	0
Diverted Trips [veh/h]	-130	-130	0	-118	-118	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	82	0	103	0	0
Total Hourly Volume [veh/h]	223	82	598	102	190	1178
Peak Hour Factor	0.8500	0.8500	0.8300	0.8300	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	66	24	180	31	52	324
Total Analysis Volume [veh/h]	262	96	720	123	209	1295
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	33	0	31	0	25	60
Amber [s]	4.0	0.0	4.0	0.0	3.0	4.0
All red [s]	2.0	0.0	2.0	0.0	1.0	2.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	0.0	4.0	0.0	2.0	4.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	39.0	0.0	37.0	0.0	29.0	66.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
C, Calculated Cycle Length [s]	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	18.2	18.2	64.0	64.0	74.8	74.8
g / C, Green / Cycle	0.17	0.17	0.61	0.61	0.71	0.71
(v / s)_i Volume / Saturation Flow Rate	0.15	0.06	0.16	0.16	0.27	0.25
s, saturation flow rate [veh/h]	1781	1589	3560	1736	786	5094
c, Capacity [veh/h]	309	275	2168	1057	609	3629
d1, Uniform Delay [s]	42.07	38.19	9.53	9.58	5.44	5.82
k, delay calibration	0.11	0.11	0.50	0.50	0.24	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.47	0.75	0.29	0.62	0.74	0.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.35	0.26	0.27	0.34	0.36
d, Delay for Lane Group [s/veh]	48.55	38.94	9.82	10.19	6.18	6.10
Lane Group LOS	D	D	A	B	A	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	7.08	2.23	2.93	3.03	1.43	3.28
50th-Percentile Queue Length [ft/ln]	176.92	55.67	73.13	75.80	35.68	81.91
95th-Percentile Queue Length [veh/ln]	11.44	4.01	5.27	5.46	2.57	5.90
95th-Percentile Queue Length [ft/ln]	285.99	100.21	131.63	136.44	64.23	147.43

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	48.55	38.94	9.90	10.19	6.18	6.10
Movement LOS	D	D	A	B	A	A
d_A, Approach Delay [s/veh]	45.97		9.95		6.11	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	12.58					
Intersection LOS	B					
Intersection V/C	0.401					

Emissions

Vehicle Miles Traveled [mph]	48.84	17.90	52.06	26.03	19.99	123.88
Stops [stops/h]	242.63	76.35	200.58	103.96	48.93	336.98
Fuel consumption [US gal/h]	5.94	1.92	4.37	2.23	1.36	8.57
CO [g/h]	415.16	134.16	305.79	155.79	94.79	598.93
NOx [g/h]	80.77	26.10	59.49	30.31	18.44	116.53
VOC [g/h]	96.22	31.09	70.87	36.11	21.97	138.81

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	629		590		1143	
d_b, Bicycle Delay [s]	24.69		26.08		9.64	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.080		2.387	
Bicycle LOS	A		B		B	

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Laredo St/Bufalo Way

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 20.1
Level Of Service: C
Volume to Capacity (v/c): 0.374

Intersection Setup

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↵		↵↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Base Volume Input [veh/h]	266	226	244	242	77	215
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	172	0	0	202
Diverted Trips [veh/h]	0	0	-259	0	0	-259
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	113	0	121	0	0
Total Hourly Volume [veh/h]	266	113	157	121	77	158
Peak Hour Factor	0.6600	0.6600	0.8000	0.8000	0.5700	0.5700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	101	43	49	38	34	69
Total Analysis Volume [veh/h]	403	171	196	151	135	277
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	41	0	51	0	48	51
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	0.0	14.0	0.0	9.0	14.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	0	6	0	6	6
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	93	93	93	93	93	93
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	24.4	24.4	51.0	51.0	60.8	60.8
g / C, Green / Cycle	0.26	0.26	0.55	0.55	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.23	0.11	0.10	0.09	0.12	0.15
s, saturation flow rate [veh/h]	1781	1589	1870	1589	1126	1870
c, Capacity [veh/h]	467	417	1022	868	793	1219
d1, Uniform Delay [s]	32.83	28.47	10.73	10.62	6.12	6.63
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.85	0.65	0.42	0.44	0.10	0.43
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.41	0.19	0.17	0.17	0.23
d, Delay for Lane Group [s/veh]	37.69	29.11	11.15	11.05	6.22	7.07
Lane Group LOS	D	C	B	B	A	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	9.09	3.19	2.06	1.58	0.92	2.14
50th-Percentile Queue Length [ft/ln]	227.21	79.67	51.44	39.57	22.91	53.43
95th-Percentile Queue Length [veh/ln]	14.03	5.74	3.70	2.85	1.65	3.85
95th-Percentile Queue Length [ft/ln]	350.81	143.40	92.59	71.22	41.23	96.17

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.69	29.11	11.15	11.05	6.22	7.07
Movement LOS	D	C	B	B	A	A
d_A, Approach Delay [s/veh]	35.13		11.11		6.79	
Approach LOS	D		B		A	
d_I, Intersection Delay [s/veh]	20.12					
Intersection LOS	C					
Intersection V/C	0.374					

Emissions

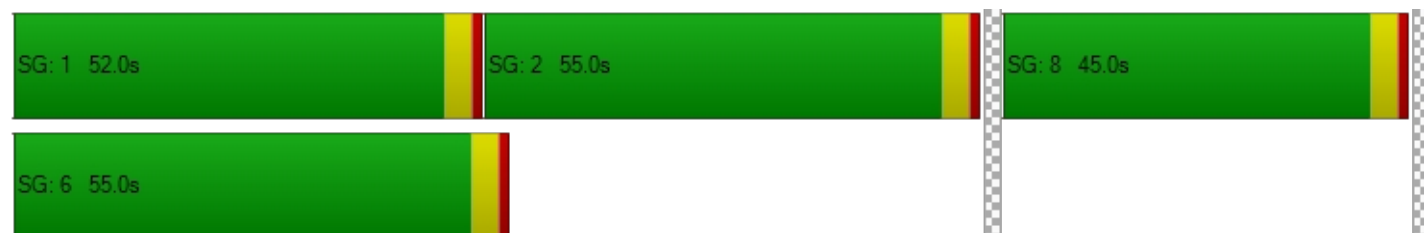
Vehicle Miles Traveled [mph]	10.31	4.38	16.98	13.08	25.17	51.64
Stops [stops/h]	350.81	123.01	79.42	61.09	35.37	82.49
Fuel consumption [US gal/h]	5.45	1.87	1.58	1.22	1.40	2.98
CO [g/h]	381.18	130.91	110.62	84.98	98.02	208.31
NOx [g/h]	74.16	25.47	21.52	16.53	19.07	40.53
VOC [g/h]	88.34	30.34	25.64	19.69	22.72	48.28

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	879		1094		1094	
d_b, Bicycle Delay [s]	14.64		9.58		9.58	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.332		2.239	
Bicycle LOS	A		B		B	

Sequence




Ring 1	1	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Laredo St/North Parking Lot

Control Type:	Two-way stop	Delay (sec / veh):	23.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.043

Intersection Setup

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Base Volume Input [veh/h]	431	12	76	247	6	76
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	166	4	6	196	4	6
Diverted Trips [veh/h]	-183	-12	-76	-160	-6	-76
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	414	4	6	283	4	6
Peak Hour Factor	0.5800	0.5800	0.6400	0.6400	0.4700	0.4700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	178	2	2	111	2	3
Total Analysis Volume [veh/h]	714	7	9	442	9	13
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.04	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	9.13	0.00	23.19	14.33
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.03	0.00	0.24	0.24
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.77	0.00	5.90	5.90
d_A, Approach Delay [s/veh]	0.00		0.18		17.96	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.40					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: Laredo St/Belleview Dr

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 21.2
Level Of Service: C
Volume to Capacity (v/c): 0.109

Intersection Setup

Name	South Laredo Street		Laredo Street		East Belleview Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		Laredo Street		East Belleview Drive	
Base Volume Input [veh/h]	357	7	10	204	19	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	134	0	0	115	0	0
Diverted Trips [veh/h]	-150	0	0	-105	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	341	7	10	214	19	15
Peak Hour Factor	0.4700	0.4700	0.8100	0.8100	0.6700	0.6700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	181	4	3	66	7	6
Total Analysis Volume [veh/h]	726	15	12	264	28	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0


Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.11	0.05
d_M, Delay for Movement [s/veh]	0.00	0.00	9.17	0.00	21.20	15.78
Movement LOS	A	A	A	A	C	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.02	0.57	0.57
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.50	0.50	14.16	14.16
d_A, Approach Delay [s/veh]	0.00		0.40		18.82	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.98					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 7: Laredo St/School Access

Control Type:	Two-way stop	Delay (sec / veh):	367.7
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.621

Intersection Setup

Name	Laredo Street		Laredo Street		New School Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Laredo Street		Laredo Street		New School Access	
Base Volume Input [veh/h]	253	0	0	189	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	130	196	4	111	166
Diverted Trips [veh/h]	-12	0	0	-105	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	245	130	196	88	111	166
Peak Hour Factor	0.4900	0.4900	0.7900	0.7900	0.5000	0.5000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	125	66	62	28	56	83
Total Analysis Volume [veh/h]	500	265	248	111	222	332
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.29	0.00	1.62	0.69
d_M, Delay for Movement [s/veh]	0.00	0.00	10.99	0.00	367.69	27.66
Movement LOS	A	A	B	A	F	D
95th-Percentile Queue Length [veh/ln]	0.00	0.00	1.22	0.00	15.87	5.24
95th-Percentile Queue Length [ft/ln]	0.00	0.00	30.50	0.00	396.86	131.07
d_A, Approach Delay [s/veh]	0.00		7.59		163.92	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	55.74					
Intersection LOS	F					

Laredo Middle School TIS

Vistro File: C:\...\AM.vistro

Scenario 6 2027 Total AM1

Report File: C:\...\2027 Total AM1.pdf

3/21/2025

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
7	Laredo St/School Access	Signalized	HCM 7th Edition	WB Left	0.596	14.5	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 7: Laredo St/School Access

Control Type:	Signalized	Delay (sec / veh):	14.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.596

Intersection Setup

Name	Laredo Street		Laredo Street		New School Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	Laredo Street		Laredo Street		New School Access	
Base Volume Input [veh/h]	253	0	0	189	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	130	196	4	111	166
Diverted Trips [veh/h]	-12	0	0	-105	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	65	0	0	0	83
Total Hourly Volume [veh/h]	245	65	196	88	111	83
Peak Hour Factor	0.4900	0.4900	0.7900	0.7900	0.5000	0.5000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	125	33	62	28	56	42
Total Analysis Volume [veh/h]	500	133	248	111	222	166
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Flashing Yellow Arrow			No			
Signal Group	2	0	1	6	8	0
Auxiliary Signal Groups						
Maximum Green [s]	55	0	52	55	45	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Walk [s]	5.0	0.0	0.0	5.0	5.0	0.0
Pedestrian Clearance [s]	10.0	0.0	0.0	10.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	40.0	40.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	14.0	0.0	9.0	14.0	9.0	0.0
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	0	5	10	5	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	L	C	L	R
C, Calculated Cycle Length [s]	51	51	51	51	51
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	23.0	33.2	33.2	10.2	10.2
g / C, Green / Cycle	0.45	0.65	0.65	0.20	0.20
(v / s)_i Volume / Saturation Flow Rate	0.39	0.27	0.07	0.14	0.12
s, saturation flow rate [veh/h]	1623	913	1683	1603	1431
c, Capacity [veh/h]	729	550	1087	318	284
d1, Uniform Delay [s]	12.79	3.81	3.45	19.18	18.70
k, delay calibration	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.33	0.58	0.04	2.78	1.91
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.45	0.10	0.70	0.59
d, Delay for Lane Group [s/veh]	16.12	4.39	3.49	21.96	20.61
Lane Group LOS	B	A	A	C	C
Critical Lane Group	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.83	0.72	0.27	2.45	1.76
50th-Percentile Queue Length [ft/ln]	145.86	18.08	6.73	61.20	43.90
95th-Percentile Queue Length [veh/ln]	9.80	1.30	0.48	4.41	3.16
95th-Percentile Queue Length [ft/ln]	244.89	32.55	12.12	110.16	79.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	16.12	16.12	4.39	3.49	21.96	20.61
Movement LOS	B	B	A	A	C	C
d_A, Approach Delay [s/veh]	16.12		4.11		21.38	
Approach LOS	B		A		C	
d_I, Intersection Delay [s/veh]	14.47					
Intersection LOS	B					
Intersection V/C	0.596					

Emissions

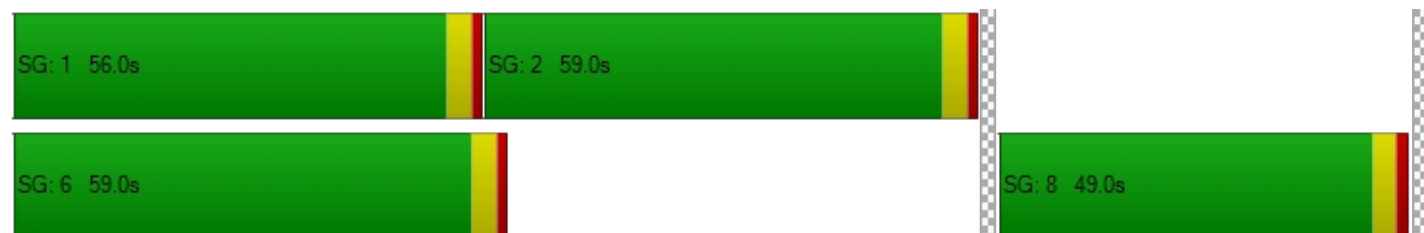
Vehicle Miles Traveled [mph]	25.07	25.02	11.20	15.50	11.59
Stops [stops/h]	409.22	50.73	18.89	171.70	123.17
Fuel consumption [US gal/h]	5.37	1.53	0.64	2.58	1.85
CO [g/h]	375.33	107.07	45.02	180.27	129.59
NOx [g/h]	73.02	20.83	8.76	35.07	25.21
VOC [g/h]	86.99	24.81	10.43	41.78	30.03

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	2143	2143	1754
d_b, Bicycle Delay [s]	0.13	0.13	0.39
I_b,int, Bicycle LOS Score for Intersection	2.711	2.152	1.560
Bicycle LOS	B	B	A

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Laredo Middle School TIS

Vistro File: C:\...\AM.vistro

Scenario 4 2050 Back AM

Report File: C:\...\2050 Back AM.pdf

3/20/2025

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Smoky Hill Rd/Laredo St	Signalized	HCM 7th Edition	NB Left	0.377	9.1	A
2	Laredo St/Buffalo Way	Signalized	HCM 7th Edition	NB Left	0.351	26.4	C
3	Laredo St/North Parking Lot	Two-way stop	HCM 7th Edition	NB Thru	0.004	0.0	A
4	Laredo St/School Exit	Two-way stop	HCM 7th Edition	NB Thru	0.007	0.0	A
5	Laredo St/School Entrance	Two-way stop	HCM 7th Edition	NB Thru	0.005	0.0	A
6	Laredo St/Bellevue Dr	Two-way stop	HCM 7th Edition	WB Left	0.061	13.5	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Smoky Hill Rd/Laredo St

Control Type:	Signalized	Delay (sec / veh):	9.1
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.377

Intersection Setup

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↵		↵	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	288.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Base Volume Input [veh/h]	267	208	592	222	207	1166
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.1200	1.0000	1.0000	1.1200
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-118	-118	0	-130	-130	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	45	0	46	0	0
Total Hourly Volume [veh/h]	149	45	663	46	77	1306
Peak Hour Factor	0.8500	0.8500	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	13	180	13	21	355
Total Analysis Volume [veh/h]	175	53	721	50	84	1420
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	33	0	31	0	25	60
Amber [s]	4.0	0.0	4.0	0.0	3.0	4.0
All red [s]	2.0	0.0	2.0	0.0	1.0	2.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	0.0	4.0	0.0	2.0	4.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	39.0	0.0	37.0	0.0	29.0	66.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
C, Calculated Cycle Length [s]	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	12.8	12.8	71.6	71.6	80.2	80.2
g / C, Green / Cycle	0.12	0.12	0.68	0.68	0.76	0.76
(v / s)_i Volume / Saturation Flow Rate	0.10	0.03	0.14	0.14	0.11	0.28
s, saturation flow rate [veh/h]	1781	1589	3560	1808	788	5094
c, Capacity [veh/h]	218	194	2425	1231	662	3889
d1, Uniform Delay [s]	44.86	41.85	6.24	6.22	3.30	4.07
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.81	0.75	0.20	0.39	0.09	0.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.27	0.21	0.21	0.13	0.37
d, Delay for Lane Group [s/veh]	51.67	42.60	6.44	6.61	3.39	4.34
Lane Group LOS	D	D	A	A	A	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.82	1.29	1.99	2.05	0.37	2.73
50th-Percentile Queue Length [ft/ln]	120.54	32.16	49.74	51.22	9.23	68.16
95th-Percentile Queue Length [veh/ln]	8.42	2.32	3.58	3.69	0.66	4.91
95th-Percentile Queue Length [ft/ln]	210.57	57.88	89.52	92.20	16.61	122.69

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	51.67	42.60	6.49	6.61	3.39	4.34
Movement LOS	D	D	A	A	A	A
d_A, Approach Delay [s/veh]	49.56		6.49		4.28	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	9.09					
Intersection LOS	A					
Intersection V/C	0.377					

Emissions

Vehicle Miles Traveled [mph]	32.62	9.88	47.61	23.80	8.04	135.84
Stops [stops/h]	165.31	44.10	136.42	70.25	12.65	280.44
Fuel consumption [US gal/h]	4.10	1.11	3.39	1.71	0.46	8.39
CO [g/h]	286.33	77.58	236.75	119.79	32.06	586.81
NOx [g/h]	55.71	15.09	46.06	23.31	6.24	114.17
VOC [g/h]	66.36	17.98	54.87	27.76	7.43	136.00

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	629		590		1143	
d_b, Bicycle Delay [s]	24.69		26.08		9.64	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.009		2.387	
Bicycle LOS	A		B		B	

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Laredo St/Bufalo Way

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 26.4
Level Of Service: C
Volume to Capacity (v/c): 0.351

Intersection Setup

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↵		↵↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Base Volume Input [veh/h]	266	226	244	242	77	215
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	-259	0	0	-236
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	113	0	121	0	0
Total Hourly Volume [veh/h]	266	113	0	121	77	0
Peak Hour Factor	0.6600	0.6600	0.8000	0.8000	0.5700	0.5700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	101	43	0	38	34	0
Total Analysis Volume [veh/h]	403	171	0	151	135	0
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	41	0	51	0	48	51
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	0.0	14.0	0.0	9.0	14.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	0	6	0	6	6
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	93	93	93	93	93	93
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	24.4	24.4	51.0	51.0	60.8	60.8
g / C, Green / Cycle	0.26	0.26	0.55	0.55	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.23	0.11	0.00	0.09	0.10	0.00
s, saturation flow rate [veh/h]	1781	1589	1870	1589	1306	1870
c, Capacity [veh/h]	467	417	1022	868	966	1219
d1, Uniform Delay [s]	32.83	28.47	0.00	10.62	6.12	0.00
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.85	0.65	0.00	0.44	0.07	0.00
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.41	0.00	0.17	0.14	0.00
d, Delay for Lane Group [s/veh]	37.69	29.11	0.00	11.05	6.18	0.00
Lane Group LOS	D	C	A	B	A	A
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	9.09	3.19	0.00	1.58	0.91	0.00
50th-Percentile Queue Length [ft/ln]	227.21	79.67	0.00	39.57	22.79	0.00
95th-Percentile Queue Length [veh/ln]	14.03	5.74	0.00	2.85	1.64	0.00
95th-Percentile Queue Length [ft/ln]	350.81	143.40	0.00	71.22	41.02	0.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.69	29.11	0.00	11.05	6.18	0.00
Movement LOS	D	C	A	B	A	A
d_A, Approach Delay [s/veh]	35.13		11.05		6.18	
Approach LOS	D		B		A	
d_I, Intersection Delay [s/veh]	26.36					
Intersection LOS	C					
Intersection V/C	0.351					

Emissions

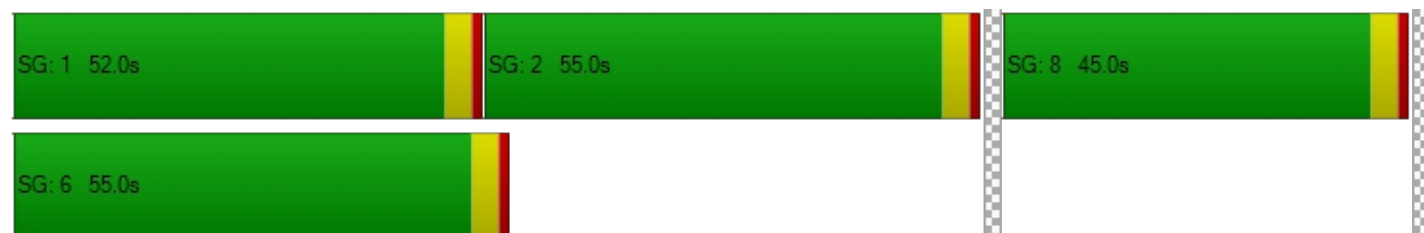
Vehicle Miles Traveled [mph]	10.31	4.38	0.00	13.08	25.17	0.00
Stops [stops/h]	350.81	123.01	0.00	61.09	35.19	0.00
Fuel consumption [US gal/h]	5.45	1.87	0.00	1.22	1.40	0.00
CO [g/h]	381.18	130.91	0.00	84.98	97.88	0.00
NOx [g/h]	74.16	25.47	0.00	16.53	19.04	0.00
VOC [g/h]	88.34	30.34	0.00	19.69	22.68	0.00

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	879		1094		1094	
d_b, Bicycle Delay [s]	14.64		9.58		9.58	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.008		1.782	
Bicycle LOS	A		B		A	

Sequence

Ring 1	1	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-






Intersection Level Of Service Report

Intersection 3: Laredo St/North Parking Lot

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Base Volume Input [veh/h]	431	12	76	247	6	76
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-183	-12	-76	-160	-6	-76
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	248	0	0	87	0	0
Peak Hour Factor	0.5800	0.5800	0.6400	0.6400	0.4700	0.4700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	107	0	0	34	0	0
Total Analysis Volume [veh/h]	428	0	0	136	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.18	0.00	12.39	10.74
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		11.57	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 4: Laredo St/School Exit

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 0.0
Level Of Service: A
Volume to Capacity (v/c): 0.007

Intersection Setup

Name	South Laredo Street		South Laredo Street		School Exit	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑		↑		↶↷	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		School Exit	
Base Volume Input [veh/h]	256	0	0	247	99	183
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-12	0	0	-166	-99	-183
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	244	0	0	81	0	0
Peak Hour Factor	0.3700	0.8500	0.8500	0.7800	0.6400	0.6400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	165	0	0	26	0	0
Total Analysis Volume [veh/h]	659	0	0	104	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0



Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	14.67	12.76
Movement LOS	A			A	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		13.72	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 5: Laredo St/School Entrance

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.005

Intersection Setup

Name	South Laredo Street		South Laredo Street		South Parking Lot	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		South Parking Lot	
Base Volume Input [veh/h]	253	138	160	189	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-12	-138	-160	-105	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	241	0	0	84	0	1
Peak Hour Factor	0.4900	0.4900	0.7900	0.7900	0.2500	0.2500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	123	0	0	27	0	1
Total Analysis Volume [veh/h]	492	0	0	106	0	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	8.36	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Laredo St/Belleview Dr

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 13.5
Level Of Service: B
Volume to Capacity (v/c): 0.061

Intersection Setup

Name	South Laredo Street		South Laredo Street		East Belleview Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		East Belleview Drive	
Base Volume Input [veh/h]	357	7	10	204	19	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-150	0	0	-105	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	207	7	10	99	19	15
Peak Hour Factor	0.4700	0.4700	0.8100	0.8100	0.6700	0.6700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	110	4	3	31	7	6
Total Analysis Volume [veh/h]	440	15	12	122	28	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.06	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	8.27	0.00	13.52	11.63
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.02	0.32	0.32
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.50	0.50	7.97	7.97
d_A, Approach Delay [s/veh]	0.00		0.74		12.69	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.15					
Intersection LOS	B					

Laredo Middle School TIS

Vistro File: C:\...\AM.vistro

Scenario 5 2050 Total AM

Report File: C:\...\2050 Total AM.pdf

3/21/2025

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Smoky Hill Rd/Laredo St	Signalized	HCM 7th Edition	NB Left	0.444	13.7	B
2	Laredo St/Buffalo Way	Signalized	HCM 7th Edition	NB Left	0.456	18.8	B
3	Laredo St/North Parking Lot	Two-way stop	HCM 7th Edition	WB Left	0.057	29.2	D
6	Laredo St/Bellevue Dr	Two-way stop	HCM 7th Edition	WB Left	0.132	25.1	D
7	Laredo St/School Access	Two-way stop	HCM 7th Edition	WB Left	3.508	1,233.0	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Smoky Hill Rd/Laredo St

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 13.7
Level Of Service: B
Volume to Capacity (v/c): 0.444

Intersection Setup

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↑↑		↵↑↑↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	288.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Base Volume Input [veh/h]	267	208	592	222	207	1166
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.1200	1.0000	1.0000	1.1200
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	114	114	0	133	133	0
Diverted Trips [veh/h]	-130	-130	0	-118	-118	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	96	0	119	0	0
Total Hourly Volume [veh/h]	251	96	663	118	222	1306
Peak Hour Factor	0.8500	0.8500	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	74	28	180	32	60	355
Total Analysis Volume [veh/h]	295	113	721	128	241	1420
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	33	0	31	0	25	60
Amber [s]	4.0	0.0	4.0	0.0	3.0	4.0
All red [s]	2.0	0.0	2.0	0.0	1.0	2.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	0.0	4.0	0.0	2.0	4.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	39.0	0.0	37.0	0.0	29.0	66.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
C, Calculated Cycle Length [s]	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	20.2	20.2	60.8	60.8	72.8	72.8
g / C, Green / Cycle	0.19	0.19	0.58	0.58	0.69	0.69
(v / s)_i Volume / Saturation Flow Rate	0.17	0.07	0.16	0.16	0.30	0.28
s, saturation flow rate [veh/h]	1781	1589	3560	1732	805	5094
c, Capacity [veh/h]	343	306	2061	1003	603	3532
d1, Uniform Delay [s]	41.05	36.87	11.07	11.12	6.36	6.84
k, delay calibration	0.11	0.11	0.50	0.50	0.34	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.40	0.74	0.33	0.70	1.33	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.37	0.27	0.28	0.40	0.40
d, Delay for Lane Group [s/veh]	47.44	37.61	11.40	11.83	7.68	7.19
Lane Group LOS	D	D	B	B	A	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	7.92	2.58	3.25	3.37	1.91	4.09
50th-Percentile Queue Length [ft/ln]	197.96	64.46	81.28	84.24	47.76	102.17
95th-Percentile Queue Length [veh/ln]	12.53	4.64	5.85	6.07	3.44	7.36
95th-Percentile Queue Length [ft/ln]	313.33	116.02	146.30	151.63	85.96	183.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	47.44	37.61	11.49	11.83	7.68	7.19
Movement LOS	D	D	B	B	A	A
d_A, Approach Delay [s/veh]	44.72		11.54		7.26	
Approach LOS	D		B		A	
d_I, Intersection Delay [s/veh]	13.74					
Intersection LOS	B					
Intersection V/C	0.444					

Emissions

Vehicle Miles Traveled [mph]	55.00	21.07	52.43	26.21	23.05	135.84
Stops [stops/h]	271.49	88.40	222.93	115.53	65.49	420.37
Fuel consumption [US gal/h]	6.61	2.22	4.70	2.40	1.69	9.99
CO [g/h]	462.17	155.21	328.71	167.67	117.97	698.38
NOx [g/h]	89.92	30.20	63.95	32.62	22.95	135.88
VOC [g/h]	107.11	35.97	76.18	38.86	27.34	161.86

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	629		590		1143	
d_b, Bicycle Delay [s]	24.69		26.08		9.64	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.092		2.473	
Bicycle LOS	A		B		B	

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Laredo St/Bufalo Way

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 18.8
Level Of Service: B
Volume to Capacity (v/c): 0.456

Intersection Setup

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↵		↵↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Base Volume Input [veh/h]	266	226	244	242	77	215
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	228	0	0	266
Diverted Trips [veh/h]	0	0	-259	0	0	-236
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	113	0	121	0	0
Total Hourly Volume [veh/h]	266	113	213	121	77	245
Peak Hour Factor	0.6600	0.6600	0.8000	0.8000	0.5700	0.5700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	101	43	67	38	34	107
Total Analysis Volume [veh/h]	403	171	266	151	135	430
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	41	0	51	0	48	51
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	0.0	14.0	0.0	9.0	14.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	0	6	0	6	6
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	93	93	93	93	93	93
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	24.4	24.4	51.0	51.0	60.8	60.8
g / C, Green / Cycle	0.26	0.26	0.55	0.55	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.23	0.11	0.14	0.09	0.13	0.23
s, saturation flow rate [veh/h]	1781	1589	1870	1589	1069	1870
c, Capacity [veh/h]	467	417	1022	868	737	1219
d1, Uniform Delay [s]	32.83	28.47	11.20	10.62	6.12	7.34
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.85	0.65	0.62	0.44	0.12	0.80
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.41	0.26	0.17	0.18	0.35
d, Delay for Lane Group [s/veh]	37.69	29.11	11.82	11.05	6.23	8.14
Lane Group LOS	D	C	B	B	A	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	9.09	3.19	2.92	1.58	0.92	3.69
50th-Percentile Queue Length [ft/ln]	227.21	79.67	73.05	39.57	22.96	92.24
95th-Percentile Queue Length [veh/ln]	14.03	5.74	5.26	2.85	1.65	6.64
95th-Percentile Queue Length [ft/ln]	350.81	143.40	131.48	71.22	41.32	166.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.69	29.11	11.82	11.05	6.23	8.14
Movement LOS	D	C	B	B	A	A
d_A, Approach Delay [s/veh]	35.13		11.54		7.69	
Approach LOS	D		B		A	
d_I, Intersection Delay [s/veh]	18.84					
Intersection LOS	B					
Intersection V/C	0.456					

Emissions

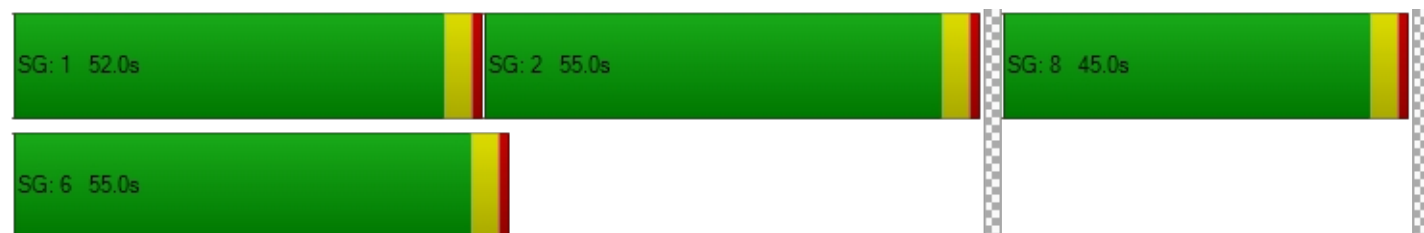
Vehicle Miles Traveled [mph]	10.31	4.38	23.04	13.08	25.17	80.16
Stops [stops/h]	350.81	123.01	112.79	61.09	35.45	142.42
Fuel consumption [US gal/h]	5.45	1.87	2.21	1.22	1.40	4.80
CO [g/h]	381.18	130.91	154.60	84.98	98.08	335.48
NOx [g/h]	74.16	25.47	30.08	16.53	19.08	65.27
VOC [g/h]	88.34	30.34	35.83	19.69	22.73	77.75

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	879		1094		1094	
d_b, Bicycle Delay [s]	14.64		9.58		9.58	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.447		2.492	
Bicycle LOS	A		B		B	

Sequence




Ring 1	1	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Laredo St/North Parking Lot

Control Type:	Two-way stop	Delay (sec / veh):	29.2
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.057

Intersection Setup

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Base Volume Input [veh/h]	431	12	76	247	6	76
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	222	4	6	260	4	6
Diverted Trips [veh/h]	-183	-12	-76	-160	-6	-76
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	470	4	6	347	4	6
Peak Hour Factor	0.5800	0.5800	0.6400	0.6400	0.4700	0.4700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	203	2	2	136	2	3
Total Analysis Volume [veh/h]	810	7	9	542	9	13
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.01	0.00	0.01	0.01	0.06	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	9.49	0.00	29.16	16.01
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.03	0.00	0.30	0.30
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.84	0.00	7.43	7.43
d_A, Approach Delay [s/veh]	0.00		0.15		21.39	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.40					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 6: Laredo St/Belleview Dr

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 25.1
Level Of Service: D
Volume to Capacity (v/c): 0.132

Intersection Setup

Name	South Laredo Street		Laredo Street		East Belleview Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		Laredo Street		East Belleview Drive	
Base Volume Input [veh/h]	357	7	10	204	19	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	177	0	0	152	0	0
Diverted Trips [veh/h]	-150	0	0	-105	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	384	7	10	251	19	15
Peak Hour Factor	0.4700	0.4700	0.8100	0.8100	0.6700	0.6700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	204	4	3	77	7	6
Total Analysis Volume [veh/h]	817	15	12	310	28	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0


Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.13	0.06
d_M, Delay for Movement [s/veh]	0.00	0.00	9.51	0.00	25.13	17.87
Movement LOS	A	A	A	A	D	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.02	0.69	0.69
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.50	0.50	17.22	17.22
d_A, Approach Delay [s/veh]	0.00		0.35		21.94	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.01					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 7: Laredo St/School Access

Control Type:	Two-way stop	Delay (sec / veh):	1,233.0
Analysis Method:	HCM 7th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	3.508

Intersection Setup

Name	Laredo Street		Laredo Street		New School Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Laredo Street		Laredo Street		New School Access	
Base Volume Input [veh/h]	253	0	0	189	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	173	260	4	148	222
Diverted Trips [veh/h]	-12	0	0	-105	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	245	173	260	88	148	222
Peak Hour Factor	0.4900	0.4900	0.7900	0.7900	0.5000	0.5000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	125	88	82	28	74	111
Total Analysis Volume [veh/h]	500	353	329	111	296	444
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.42	0.00	3.51	0.98
d_M, Delay for Movement [s/veh]	0.00	0.00	12.83	0.00	1233.02	67.79
Movement LOS	A	A	B	A	F	F
95th-Percentile Queue Length [veh/ln]	0.00	0.00	2.08	0.00	30.14	12.35
95th-Percentile Queue Length [ft/ln]	0.00	0.00	52.08	0.00	753.39	308.70
d_A, Approach Delay [s/veh]	0.00		9.60		533.89	
Approach LOS	A		A		F	
d_I, Intersection Delay [s/veh]	196.41					
Intersection LOS	F					

Laredo Middle School TIS

Vistro File: C:\...\AM.vistro

Scenario 7 2050 Total AM1

Report File: C:\...\2050 Total AM1.pdf

3/21/2025

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
7	Laredo St/School Access	Signalized	HCM 7th Edition	WB Left	0.630	16.4	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 7: Laredo St/School Access

Control Type:	Signalized	Delay (sec / veh):	16.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.630

Intersection Setup

Name	Laredo Street		Laredo Street		New School Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	Laredo Street		Laredo Street		New School Access	
Base Volume Input [veh/h]	253	0	0	189	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	173	260	4	148	222
Diverted Trips [veh/h]	-12	0	0	-105	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	87	0	0	0	111
Total Hourly Volume [veh/h]	245	86	260	88	148	111
Peak Hour Factor	0.4900	0.4900	0.7900	0.7900	0.5000	0.5000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	125	44	82	28	74	56
Total Analysis Volume [veh/h]	500	176	329	111	296	222
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Flashing Yellow Arrow			No			
Signal Group	2	0	1	6	8	0
Auxiliary Signal Groups						
Maximum Green [s]	55	0	52	55	45	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Walk [s]	5.0	0.0	0.0	5.0	5.0	0.0
Pedestrian Clearance [s]	10.0	0.0	0.0	10.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	40.0	40.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	14.0	0.0	9.0	14.0	9.0	0.0
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	0	5	10	5	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	L	C	L	R
C, Calculated Cycle Length [s]	59	59	59	59	59
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	25.6	37.7	37.7	13.3	13.3
g / C, Green / Cycle	0.43	0.64	0.64	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.38	0.32	0.06	0.17	0.14
s, saturation flow rate [veh/h]	1788	1016	1870	1781	1589
c, Capacity [veh/h]	776	578	1195	402	359
d1, Uniform Delay [s]	15.25	4.73	4.10	21.29	20.63
k, delay calibration	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.21	0.88	0.03	2.65	1.74
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.57	0.09	0.74	0.62
d, Delay for Lane Group [s/veh]	18.46	5.61	4.13	23.94	22.38
Lane Group LOS	B	A	A	C	C
Critical Lane Group	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	7.66	1.37	0.37	3.78	2.71
50th-Percentile Queue Length [ft/ln]	191.38	34.19	9.24	94.57	67.71
95th-Percentile Queue Length [veh/ln]	12.19	2.46	0.67	6.81	4.88
95th-Percentile Queue Length [ft/ln]	304.83	61.55	16.63	170.22	121.88

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	18.46	18.46	5.61	4.13	23.94	22.38
Movement LOS	B	B	A	A	C	C
d_A, Approach Delay [s/veh]	18.46		5.24		23.27	
Approach LOS	B		A		C	
d_I, Intersection Delay [s/veh]	16.42					
Intersection LOS	B					
Intersection V/C	0.630					

Emissions

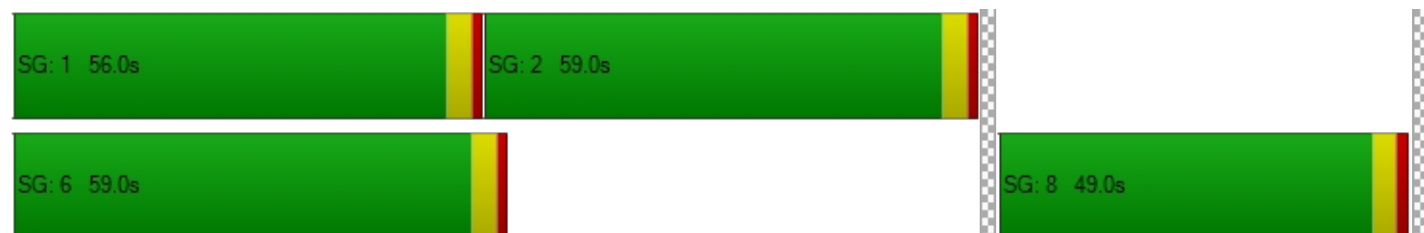
Vehicle Miles Traveled [mph]	26.77	33.19	11.20	20.67	15.50
Stops [stops/h]	466.60	83.37	22.52	230.56	165.08
Fuel consumption [US gal/h]	6.22	2.20	0.68	3.57	2.56
CO [g/h]	434.74	153.96	47.44	249.30	179.02
NOx [g/h]	84.58	29.95	9.23	48.50	34.83
VOC [g/h]	100.75	35.68	10.99	57.78	41.49

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1862	1862	1524
d_b, Bicycle Delay [s]	0.14	0.14	1.67
I_b,int, Bicycle LOS Score for Intersection	2.819	2.286	1.560
Bicycle LOS	C	B	A

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



After School Peak Hour

Laredo Middle School TIS

Vistro File: C:\...\AS.vistro
Report File: C:\...\2025 AS.pdf

Scenario 1 2025 AS
3/20/2025

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Smoky Hill Rd/Laredo St	Signalized	HCM 7th Edition	NB Left	0.579	21.8	C
2	Laredo St/Buffalo Way	Signalized	HCM 7th Edition	NB Right	0.547	19.9	B
3	Laredo St/North Parking Lot	Two-way stop	HCM 7th Edition	WB Left	0.193	23.5	C
4	Laredo St/School Exit	Two-way stop	HCM 7th Edition	WB Left	0.473	21.5	C
5	Laredo St/School Entrance	Two-way stop	HCM 7th Edition	SB Left	0.071	7.9	A
6	Laredo St/Bellevue Dr	Two-way stop	HCM 7th Edition	WB Left	0.084	14.3	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Smoky Hill Rd/Laredo St

Control Type:	Signalized	Delay (sec / veh):	21.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.579

Intersection Setup

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↵		↵	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	288.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Base Volume Input [veh/h]	291	282	1064	120	163	920
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	141	0	60	0	0
Total Hourly Volume [veh/h]	291	141	1064	60	163	920
Peak Hour Factor	0.5600	0.5600	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	130	63	292	16	45	253
Total Analysis Volume [veh/h]	520	252	1169	66	179	1011
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	33	0	25	0	16	45
Amber [s]	4.0	0.0	4.0	0.0	3.0	4.0
All red [s]	2.0	0.0	2.0	0.0	1.0	2.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	0.0	4.0	0.0	2.0	4.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	39.0	0.0	31.0	0.0	20.0	51.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
C, Calculated Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	29.0	29.0	38.0	38.0	49.0	49.0
g / C, Green / Cycle	0.32	0.32	0.42	0.42	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.29	0.16	0.23	0.23	0.26	0.20
s, saturation flow rate [veh/h]	1781	1589	3560	1819	698	5094
c, Capacity [veh/h]	573	511	1500	766	417	2776
d1, Uniform Delay [s]	29.24	24.60	19.60	19.48	12.88	11.63
k, delay calibration	0.27	0.11	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.85	0.74	1.45	2.69	3.20	0.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.91	0.49	0.55	0.54	0.43	0.36
d, Delay for Lane Group [s/veh]	42.08	25.34	21.05	22.17	16.08	12.00
Lane Group LOS	D	C	C	C	B	B
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	12.38	4.32	6.49	6.72	2.06	3.67
50th-Percentile Queue Length [ft/ln]	309.52	107.98	162.31	168.11	51.53	91.64
95th-Percentile Queue Length [veh/ln]	18.15	7.73	10.67	10.98	3.71	6.60
95th-Percentile Queue Length [ft/ln]	453.78	193.19	266.78	274.43	92.75	164.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.08	25.34	21.38	22.17	16.08	12.00
Movement LOS	D	C	C	C	B	B
d_A, Approach Delay [s/veh]	36.62		21.42		12.61	
Approach LOS	D		C		B	
d_I, Intersection Delay [s/veh]	21.81					
Intersection LOS	C					
Intersection V/C	0.579					

Emissions

Vehicle Miles Traveled [mph]	96.94	46.98	76.26	38.13	17.12	96.72
Stops [stops/h]	495.23	172.77	519.39	268.98	82.44	439.89
Fuel consumption [US gal/h]	11.18	4.19	9.54	4.91	1.75	8.88
CO [g/h]	781.47	292.73	666.58	343.44	122.07	620.75
NOx [g/h]	152.05	56.95	129.69	66.82	23.75	120.78
VOC [g/h]	181.11	67.84	154.49	79.59	28.29	143.87

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	733		556		1000	
d_b, Bicycle Delay [s]	18.05		23.47		11.25	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.272		2.214	
Bicycle LOS	A		B		B	

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Laredo St/Bufalo Way

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 19.9
Level Of Service: B
Volume to Capacity (v/c): 0.547

Intersection Setup

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↵		↵↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Base Volume Input [veh/h]	119	352	195	72	210	149
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	176	0	36	0	0
Total Hourly Volume [veh/h]	119	176	195	36	210	149
Peak Hour Factor	0.4300	0.4300	0.5000	0.5000	0.7100	0.7100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	69	102	98	18	74	52
Total Analysis Volume [veh/h]	277	409	390	72	296	210
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	36	0	36	0	34	36
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	0.0	14.0	0.0	9.0	14.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	0	6	0	6	6
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	82	82	82	82	82	82
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	24.6	24.6	36.0	36.0	49.7	49.7
g / C, Green / Cycle	0.30	0.30	0.44	0.44	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.16	0.26	0.21	0.05	0.26	0.11
s, saturation flow rate [veh/h]	1781	1589	1870	1589	1120	1870
c, Capacity [veh/h]	534	477	816	694	667	1128
d1, Uniform Delay [s]	23.94	27.22	16.54	13.71	7.79	7.31
k, delay calibration	0.11	0.15	0.50	0.50	0.19	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.78	6.40	2.00	0.30	0.82	0.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	0.86	0.48	0.10	0.44	0.19
d, Delay for Lane Group [s/veh]	24.72	33.62	18.54	14.01	8.61	7.68
Lane Group LOS	C	C	B	B	A	A
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.42	8.08	5.37	0.81	2.35	1.58
50th-Percentile Queue Length [ft/ln]	110.62	202.01	134.26	20.26	58.65	39.41
95th-Percentile Queue Length [veh/ln]	7.87	12.74	9.17	1.46	4.22	2.84
95th-Percentile Queue Length [ft/ln]	196.86	318.56	229.28	36.47	105.58	70.94

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	24.72	33.62	18.54	14.01	8.61	7.68
Movement LOS	C	C	B	B	A	A
d_A, Approach Delay [s/veh]	30.02		17.83		8.22	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]	19.95					
Intersection LOS	B					
Intersection V/C	0.547					

Emissions

Vehicle Miles Traveled [mph]	7.09	10.46	33.78	6.24	55.18	39.15
Stops [stops/h]	193.54	353.44	234.91	35.45	102.62	68.95
Fuel consumption [US gal/h]	2.75	5.18	4.16	0.66	3.36	2.32
CO [g/h]	192.54	362.18	290.77	45.98	234.66	162.22
NOx [g/h]	37.46	70.47	56.57	8.95	45.66	31.56
VOC [g/h]	44.62	83.94	67.39	10.66	54.38	37.60

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	875		875		875	
d_b, Bicycle Delay [s]	13.03		13.03		13.03	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.381		2.395	
Bicycle LOS	A		B		B	

Sequence

Ring 1	1	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-






Intersection Level Of Service Report

Intersection 3: Laredo St/North Parking Lot

Control Type:	Two-way stop	Delay (sec / veh):	23.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.193

Intersection Setup

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Base Volume Input [veh/h]	218	16	27	242	22	52
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	218	16	27	242	22	52
Peak Hour Factor	0.5500	0.5500	0.5200	0.5200	0.4300	0.4300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	99	7	13	116	13	30
Total Analysis Volume [veh/h]	396	29	52	465	51	121
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.05	0.00	0.19	0.19
d_M, Delay for Movement [s/veh]	0.00	0.00	8.33	0.00	23.45	15.46
Movement LOS	A	A	A	A	C	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.14	0.00	1.76	1.76
95th-Percentile Queue Length [ft/ln]	0.00	0.00	3.60	0.00	44.04	44.04
d_A, Approach Delay [s/veh]	0.00		0.84		17.83	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	3.14					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 4: Laredo St/School Exit

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 21.5
Level Of Service: C
Volume to Capacity (v/c): 0.473

Intersection Setup

Name	South Laredo Street		South Laredo Street		School Exit	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑		↑		↶↷	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		School Exit	
Base Volume Input [veh/h]	164	0	0	254	54	79
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	164	0	0	254	54	79
Peak Hour Factor	0.8300	0.8500	0.8500	0.5100	0.2800	0.2800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	0	0	125	48	71
Total Analysis Volume [veh/h]	198	0	0	498	193	282
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0



Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.47	0.33
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	21.52	11.40
Movement LOS	A			A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	2.47	1.48
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	61.74	36.92
d_A, Approach Delay [s/veh]	0.00		0.00		15.51	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	6.29					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 5: Laredo St/School Entrance

Control Type:	Two-way stop	Delay (sec / veh):	7.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.071

Intersection Setup

Name	South Laredo Street		South Laredo Street		South Parking Lot	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		South Parking Lot	
Base Volume Input [veh/h]	149	36	61	546	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	149	36	61	546	0	1
Peak Hour Factor	0.8000	0.8000	0.6400	0.6400	0.2500	0.2500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	11	24	213	0	1
Total Analysis Volume [veh/h]	186	45	95	853	0	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.00	0.00	0.07	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.90	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.23	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	5.73	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.79		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.64					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Laredo St/Belleview Dr

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 14.3
Level Of Service: B
Volume to Capacity (v/c): 0.084

Intersection Setup

Name	South Laredo Street		South Laredo Street		East Belleview Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		East Belleview Drive	
Base Volume Input [veh/h]	145	24	20	178	17	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	145	24	20	178	17	15
Peak Hour Factor	0.6700	0.6700	0.5500	0.5500	0.4700	0.4700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	9	9	81	9	8
Total Analysis Volume [veh/h]	216	36	36	324	36	32
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.08	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	7.78	0.00	14.28	10.39
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.06	0.06	0.42	0.42
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.53	1.53	10.48	10.48
d_A, Approach Delay [s/veh]	0.00		0.78		12.45	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.66					
Intersection LOS	B					

Laredo Middle School TIS

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3/20/2025

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Smoky Hill Rd/Laredo St	Signalized	HCM 7th Edition	NB Left	0.490	17.0	B
2	Laredo St/Buffalo Way	Signalized	HCM 7th Edition	NB Right	0.407	20.8	C
3	Laredo St/North Parking Lot	Two-way stop	HCM 7th Edition	SB Thru	0.003	0.0	A
4	Laredo St/School Exit	Two-way stop	HCM 7th Edition	SB Thru	0.004	0.0	A
5	Laredo St/School Entrance	Two-way stop	HCM 7th Edition	SB Thru	0.007	0.0	A
6	Laredo St/Bellevue Dr	Two-way stop	HCM 7th Edition	WB Left	0.062	11.8	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Smoky Hill Rd/Laredo St

Control Type:	Signalized	Delay (sec / veh):	17.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.490

Intersection Setup

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↑↑		↵↑↑↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	288.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Base Volume Input [veh/h]	291	282	1064	120	163	920
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0100	1.0000	1.0000	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-65	-66	0	-43	-45	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	108	0	39	0	0
Total Hourly Volume [veh/h]	226	108	1075	38	118	929
Peak Hour Factor	0.5600	0.5600	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	101	48	295	10	32	255
Total Analysis Volume [veh/h]	404	193	1181	42	130	1021
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	33	0	25	0	16	45
Amber [s]	4.0	0.0	4.0	0.0	3.0	4.0
All red [s]	2.0	0.0	2.0	0.0	1.0	2.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	0.0	4.0	0.0	2.0	4.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	39.0	0.0	31.0	0.0	20.0	51.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
C, Calculated Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	23.5	23.5	45.5	45.5	54.5	54.5
g / C, Green / Cycle	0.26	0.26	0.51	0.51	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate	0.23	0.12	0.23	0.22	0.21	0.20
s, saturation flow rate [veh/h]	1781	1589	3560	1837	628	5094
c, Capacity [veh/h]	464	415	1798	928	429	3086
d1, Uniform Delay [s]	31.80	27.99	14.30	14.17	9.06	8.74
k, delay calibration	0.15	0.11	0.50	0.50	0.25	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.89	0.81	0.83	1.51	0.90	0.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.47	0.45	0.44	0.30	0.33
d, Delay for Lane Group [s/veh]	38.69	28.80	15.13	15.68	9.96	9.03
Lane Group LOS	D	C	B	B	A	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	9.04	3.52	5.22	5.35	1.08	3.05
50th-Percentile Queue Length [ft/ln]	225.97	88.00	130.41	133.85	27.10	76.20
95th-Percentile Queue Length [veh/ln]	13.97	6.34	8.96	9.15	1.95	5.49
95th-Percentile Queue Length [ft/ln]	349.23	158.40	224.05	228.72	48.79	137.17

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.69	28.80	15.30	15.68	9.96	9.03
Movement LOS	D	C	B	B	A	A
d_A, Approach Delay [s/veh]	35.49		15.31		9.14	
Approach LOS	D		B		A	
d_I, Intersection Delay [s/veh]	16.97					
Intersection LOS	B					
Intersection V/C	0.490					

Emissions

Vehicle Miles Traveled [mph]	75.32	35.98	75.52	37.76	12.44	97.67
Stops [stops/h]	361.55	140.80	417.31	214.17	43.37	365.77
Fuel consumption [US gal/h]	8.28	3.39	7.92	4.04	1.02	7.92
CO [g/h]	578.69	236.98	553.93	282.31	70.95	553.49
NOx [g/h]	112.59	46.11	107.77	54.93	13.80	107.69
VOC [g/h]	134.12	54.92	128.38	65.43	16.44	128.28

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	733		556		1000	
d_b, Bicycle Delay [s]	18.05		23.47		11.25	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.254		2.193	
Bicycle LOS	A		B		B	

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Laredo St/Bufalo Way

Control Type:	Signalized	Delay (sec / veh):	20.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.407

Intersection Setup

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Base Volume Input [veh/h]	119	352	195	72	210	149
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	-131	0	0	-88
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	176	0	36	0	0
Total Hourly Volume [veh/h]	119	176	64	36	210	61
Peak Hour Factor	0.4300	0.4300	0.5000	0.5000	0.7100	0.7100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	69	102	32	18	74	21
Total Analysis Volume [veh/h]	277	409	128	72	296	86
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	36	0	36	0	34	36
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	0.0	14.0	0.0	9.0	14.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	0	6	0	6	6
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	82	82	82	82	82	82
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	24.6	24.6	36.0	36.0	49.7	49.7
g / C, Green / Cycle	0.30	0.30	0.44	0.44	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.16	0.26	0.07	0.05	0.22	0.05
s, saturation flow rate [veh/h]	1781	1589	1870	1589	1320	1870
c, Capacity [veh/h]	534	477	816	694	876	1128
d1, Uniform Delay [s]	23.94	27.22	14.05	13.71	7.79	6.80
k, delay calibration	0.11	0.15	0.50	0.50	0.12	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.78	6.40	0.41	0.30	0.25	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	0.86	0.16	0.10	0.34	0.08
d, Delay for Lane Group [s/veh]	24.72	33.62	14.46	14.01	8.03	6.94
Lane Group LOS	C	C	B	B	A	A
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.42	8.08	1.46	0.81	2.25	0.60
50th-Percentile Queue Length [ft/ln]	110.62	202.01	36.60	20.26	56.37	14.96
95th-Percentile Queue Length [veh/ln]	7.87	12.74	2.64	1.46	4.06	1.08
95th-Percentile Queue Length [ft/ln]	196.86	318.56	65.88	36.47	101.47	26.93

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	24.72	33.62	14.46	14.01	8.03	6.94
Movement LOS	C	C	B	B	A	A
d_A, Approach Delay [s/veh]	30.02		14.30		7.79	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]	20.84					
Intersection LOS	C					
Intersection V/C	0.407					

Emissions

Vehicle Miles Traveled [mph]	7.09	10.46	11.09	6.24	55.18	16.03
Stops [stops/h]	193.54	353.44	64.03	35.45	98.63	26.18
Fuel consumption [US gal/h]	2.75	5.18	1.19	0.66	3.30	0.93
CO [g/h]	192.54	362.18	82.96	45.98	230.71	64.73
NOx [g/h]	37.46	70.47	16.14	8.95	44.89	12.59
VOC [g/h]	44.62	83.94	19.23	10.66	53.47	15.00

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	875		875		875	
d_b, Bicycle Delay [s]	13.03		13.03		13.03	
I_b,int, Bicycle LOS Score for Intersection	1.560		1.949		2.190	
Bicycle LOS	A		A		B	

Sequence




Ring 1	1	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Laredo St/North Parking Lot

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Base Volume Input [veh/h]	218	16	27	242	22	52
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-79	-16	-27	-61	-22	-52
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	139	0	0	181	0	0
Peak Hour Factor	0.5500	0.5500	0.5200	0.5200	0.4300	0.4300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	63	0	0	87	0	0
Total Analysis Volume [veh/h]	253	0	0	348	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.74	0.00	12.77	9.58
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		11.18	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 4: Laredo St/School Exit

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name	South Laredo Street		South Laredo Street		School Exit	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑		↑		↶↷	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		School Exit	
Base Volume Input [veh/h]	164	0	0	254	54	79
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-16	0	0	-61	-54	-79
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	148	0	0	193	0	0
Peak Hour Factor	0.8300	0.8500	0.8500	0.5100	0.2800	0.2800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	0	0	95	0	0
Total Analysis Volume [veh/h]	178	0	0	378	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0



Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	12.32	9.16
Movement LOS	A			A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		10.74	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 5: Laredo St/School Entrance

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

Intersection Setup

Name	South Laredo Street		South Laredo Street		South Parking Lot	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		South Parking Lot	
Base Volume Input [veh/h]	149	36	61	546	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-16	-36	-61	-76	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	133	0	0	470	0	1
Peak Hour Factor	0.8000	0.8000	0.6400	0.6400	0.2500	0.2500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	0	0	184	0	1
Total Analysis Volume [veh/h]	166	0	0	734	0	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.55	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Laredo St/Belleview Dr

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 11.8
Level Of Service: B
Volume to Capacity (v/c): 0.062

Intersection Setup

Name	South Laredo Street		South Laredo Street		East Belleview Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		East Belleview Drive	
Base Volume Input [veh/h]	145	24	20	178	17	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-52	0	0	-76	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	93	24	20	102	17	15
Peak Hour Factor	0.6700	0.6700	0.5500	0.5500	0.4700	0.4700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	9	9	46	9	8
Total Analysis Volume [veh/h]	139	36	36	185	36	32
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.06	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	7.61	0.00	11.80	9.62
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.06	0.06	0.33	0.33
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.53	1.53	8.15	8.15
d_A, Approach Delay [s/veh]	0.00		1.24		10.77	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.17					
Intersection LOS	B					

Laredo Middle School TIS

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Scenario 3 2027 Total AS

Report File: C:\...\2027 Total AS.pdf

3/20/2025

Intersection Analysis Summary




ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Smoky Hill Rd/Laredo St	Signalized	HCM 7th Edition	NB Left	0.576	21.4	C
2	Laredo St/Buffalo Way	Signalized	HCM 7th Edition	NB Right	0.531	19.7	B
3	Laredo St/North Parking Lot	Two-way stop	HCM 7th Edition	WB Left	0.034	19.2	C
6	Laredo St/Bellevue Dr	Two-way stop	HCM 7th Edition	WB Left	0.086	14.6	B
7	Laredo St/School Access	Two-way stop	HCM 7th Edition	WB Left	0.467	25.9	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Smoky Hill Rd/Laredo St

Control Type:	Signalized	Delay (sec / veh):	21.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.576

Intersection Setup

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	288.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Base Volume Input [veh/h]	291	282	1064	120	163	920
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0100	1.0000	1.0000	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	58	58	0	50	50	0
Diverted Trips [veh/h]	-65	-66	0	-43	-45	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	137	0	64	0	0
Total Hourly Volume [veh/h]	284	137	1075	63	168	929
Peak Hour Factor	0.5600	0.5600	0.9100	0.9100	0.9100	0.9100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	127	61	295	17	46	255
Total Analysis Volume [veh/h]	507	245	1181	69	185	1021
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	33	0	25	0	16	45
Amber [s]	4.0	0.0	4.0	0.0	3.0	4.0
All red [s]	2.0	0.0	2.0	0.0	1.0	2.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	0.0	4.0	0.0	2.0	4.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	39.0	0.0	31.0	0.0	20.0	51.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
C, Calculated Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	28.4	28.4	38.4	38.4	49.6	49.6
g / C, Green / Cycle	0.32	0.32	0.43	0.43	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.28	0.15	0.23	0.23	0.27	0.20
s, saturation flow rate [veh/h]	1781	1589	3560	1817	694	5094
c, Capacity [veh/h]	562	501	1517	774	420	2808
d1, Uniform Delay [s]	29.49	24.94	19.35	19.23	12.76	11.33
k, delay calibration	0.26	0.11	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.07	0.74	1.44	2.68	3.33	0.37
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.49	0.55	0.54	0.44	0.36
d, Delay for Lane Group [s/veh]	41.56	25.68	20.79	21.91	16.09	11.70
Lane Group LOS	D	C	C	C	B	B
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	11.97	4.23	6.53	6.76	2.11	3.64
50th-Percentile Queue Length [ft/ln]	299.27	105.64	163.15	169.01	52.72	91.04
95th-Percentile Queue Length [veh/ln]	17.65	7.60	10.72	11.02	3.80	6.55
95th-Percentile Queue Length [ft/ln]	441.13	189.92	267.88	275.62	94.90	163.87

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	41.56	25.68	21.12	21.91	16.09	11.70
Movement LOS	D	C	C	C	B	B
d_A, Approach Delay [s/veh]	36.38		21.16		12.37	
Approach LOS	D		C		B	
d_I, Intersection Delay [s/veh]	21.42					
Intersection LOS	C					
Intersection V/C	0.576					

Emissions

Vehicle Miles Traveled [mph]	94.52	45.67	77.19	38.59	17.70	97.67
Stops [stops/h]	478.84	169.02	522.07	270.42	84.36	437.00
Fuel consumption [US gal/h]	10.82	4.09	9.59	4.94	1.80	8.87
CO [g/h]	756.59	286.18	670.12	345.33	125.85	619.71
NOx [g/h]	147.20	55.68	130.38	67.19	24.49	120.57
VOC [g/h]	175.35	66.33	155.31	80.03	29.17	143.62

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	733		556		1000	
d_b, Bicycle Delay [s]	18.05		23.47		11.25	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.282		2.223	
Bicycle LOS	A		B		B	

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-






Intersection Level Of Service Report
Intersection 2: Laredo St/Bufalo Way

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 19.7
Level Of Service: B
Volume to Capacity (v/c): 0.531

Intersection Setup

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Base Volume Input [veh/h]	119	352	195	72	210	149
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	116	0	0	100
Diverted Trips [veh/h]	0	0	-131	0	0	-88
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	176	0	36	0	0
Total Hourly Volume [veh/h]	119	176	180	36	210	161
Peak Hour Factor	0.4300	0.4300	0.5000	0.5000	0.7100	0.7100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	69	102	90	18	74	57
Total Analysis Volume [veh/h]	277	409	360	72	296	227
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	36	0	36	0	34	36
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	0.0	14.0	0.0	9.0	14.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	0	6	0	6	6
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	82	82	82	82	82	82
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	24.6	24.6	36.0	36.0	49.7	49.7
g / C, Green / Cycle	0.30	0.30	0.44	0.44	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.16	0.26	0.19	0.05	0.26	0.12
s, saturation flow rate [veh/h]	1781	1589	1870	1589	1140	1870
c, Capacity [veh/h]	534	477	816	694	689	1128
d1, Uniform Delay [s]	23.94	27.22	16.21	13.71	7.79	7.39
k, delay calibration	0.11	0.15	0.50	0.50	0.18	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.78	6.40	1.73	0.30	0.72	0.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	0.86	0.44	0.10	0.43	0.20
d, Delay for Lane Group [s/veh]	24.72	33.62	17.94	14.01	8.50	7.79
Lane Group LOS	C	C	B	B	A	A
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.42	8.08	4.84	0.81	2.33	1.72
50th-Percentile Queue Length [ft/ln]	110.62	202.01	121.01	20.26	58.28	43.07
95th-Percentile Queue Length [veh/ln]	7.87	12.74	8.45	1.46	4.20	3.10
95th-Percentile Queue Length [ft/ln]	196.86	318.56	211.21	36.47	104.91	77.52

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	24.72	33.62	17.94	14.01	8.50	7.79
Movement LOS	C	C	B	B	A	A
d_A, Approach Delay [s/veh]	30.02		17.28		8.19	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]	19.71					
Intersection LOS	B					
Intersection V/C	0.531					

Emissions

Vehicle Miles Traveled [mph]	7.09	10.46	31.18	6.24	55.18	42.32
Stops [stops/h]	193.54	353.44	211.72	35.45	101.97	75.35
Fuel consumption [US gal/h]	2.75	5.18	3.77	0.66	3.35	2.52
CO [g/h]	192.54	362.18	263.35	45.98	233.97	176.03
NOx [g/h]	37.46	70.47	51.24	8.95	45.52	34.25
VOC [g/h]	44.62	83.94	61.03	10.66	54.22	40.80

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	875		875		875	
d_b, Bicycle Delay [s]	13.03		13.03		13.03	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.332		2.423	
Bicycle LOS	A		B		B	

Sequence




Ring 1	1	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Laredo St/North Parking Lot

Control Type:	Two-way stop	Delay (sec / veh):	19.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.034

Intersection Setup

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Base Volume Input [veh/h]	218	16	27	242	22	52
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	110	4	6	94	4	6
Diverted Trips [veh/h]	-79	-16	-27	-61	-22	-52
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	249	4	6	275	4	6
Peak Hour Factor	0.5500	0.5500	0.5200	0.5200	0.4300	0.4300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	113	2	3	132	2	3
Total Analysis Volume [veh/h]	453	7	12	529	9	14
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.00	0.00	0.01	0.01	0.03	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	8.31	0.00	19.23	11.51
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.03	0.00	0.18	0.18
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.83	0.00	4.55	4.55
d_A, Approach Delay [s/veh]	0.00		0.18		14.53	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.42					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: Laredo St/Belleview Dr

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 14.6
Level Of Service: B
Volume to Capacity (v/c): 0.086

Intersection Setup

Name	South Laredo Street		Laredo Street		East Belleview Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		Laredo Street		East Belleview Drive	
Base Volume Input [veh/h]	145	24	20	178	17	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	66	0	0	78	0	0
Diverted Trips [veh/h]	-52	0	0	-76	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	159	24	20	180	17	15
Peak Hour Factor	0.6700	0.6700	0.5500	0.5500	0.4700	0.4700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	9	9	82	9	8
Total Analysis Volume [veh/h]	237	36	36	327	36	32
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0



Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.09	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	7.83	0.00	14.62	10.57
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.06	0.06	0.43	0.43
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.53	1.53	10.85	10.85
d_A, Approach Delay [s/veh]	0.00		0.78		12.71	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.63					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 7: Laredo St/School Access

Control Type:	Two-way stop	Delay (sec / veh):	25.9
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.467

Intersection Setup

Name	Laredo Street		Laredo Street		New School Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Laredo Street		Laredo Street		New School Access	
Base Volume Input [veh/h]	149	36	61	246	11	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	62	94	4	74	110
Diverted Trips [veh/h]	-16	-36	-61	-76	-11	-12
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	137	62	94	174	74	110
Peak Hour Factor	0.4900	0.4900	0.7900	0.7900	0.5000	0.5000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	70	32	30	55	37	55
Total Analysis Volume [veh/h]	280	127	119	220	148	220
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.10	0.00	0.47	0.31
d_M, Delay for Movement [s/veh]	0.00	0.00	8.49	0.00	25.93	12.49
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.34	0.00	2.36	1.35
95th-Percentile Queue Length [ft/ln]	0.00	0.00	8.62	0.00	59.10	33.67
d_A, Approach Delay [s/veh]	0.00		2.98		17.90	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	6.82					
Intersection LOS	D					

Laredo Middle School TIS

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Scenario 6 2027 Total AS1

Report File: C:\...\2027 Total AS1.pdf

3/20/2025

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
7	Laredo St/School Access	Signalized	HCM 7th Edition	NB Thru	0.354	11.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 7: Laredo St/School Access

Control Type:	Signalized	Delay (sec / veh):	11.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.354

Intersection Setup

Name	Laredo Street		Laredo Street		New School Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	Laredo Street		Laredo Street		New School Access	
Base Volume Input [veh/h]	149	36	61	246	11	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	62	94	4	74	110
Diverted Trips [veh/h]	-16	-36	-61	-76	-11	-12
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	31	0	0	0	55
Total Hourly Volume [veh/h]	137	31	94	174	74	55
Peak Hour Factor	0.4900	0.4900	0.7900	0.7900	0.5000	0.5000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	70	16	30	55	37	28
Total Analysis Volume [veh/h]	280	63	119	220	148	110
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Flashing Yellow Arrow			Yes			
Signal Group	2	0	1	6	8	0
Auxiliary Signal Groups						
Maximum Green [s]	55	0	52	55	45	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Walk [s]	5.0	0.0	0.0	5.0	5.0	0.0
Pedestrian Clearance [s]	10.0	0.0	0.0	10.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	40.0	40.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	14.0	0.0	9.0	14.0	9.0	0.0
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	0	5	10	5	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	L	C	L	R
C, Calculated Cycle Length [s]	25	25	25	25	25
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5.7	12.5	12.5	4.3	4.3
g / C, Green / Cycle	0.23	0.50	0.50	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.21	0.10	0.13	0.09	0.08
s, saturation flow rate [veh/h]	1630	1192	1683	1603	1431
c, Capacity [veh/h]	375	831	850	279	249
d1, Uniform Delay [s]	9.36	3.88	3.51	9.37	9.21
k, delay calibration	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.05	0.08	0.16	1.57	1.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.92	0.14	0.26	0.53	0.44
d, Delay for Lane Group [s/veh]	18.41	3.96	3.67	10.94	10.45
Lane Group LOS	B	A	A	B	B
Critical Lane Group	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.00	0.09	0.17	0.58	0.42
50th-Percentile Queue Length [ft/ln]	49.93	2.15	4.29	14.50	10.51
95th-Percentile Queue Length [veh/ln]	3.60	0.16	0.31	1.04	0.76
95th-Percentile Queue Length [ft/ln]	89.88	3.88	7.73	26.10	18.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	18.41	18.41	3.96	3.67	10.94	10.45
Movement LOS	B	B	A	A	B	B
d_A, Approach Delay [s/veh]	18.41		3.77		10.73	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	11.02					
Intersection LOS	B					
Intersection V/C	0.354					

Emissions

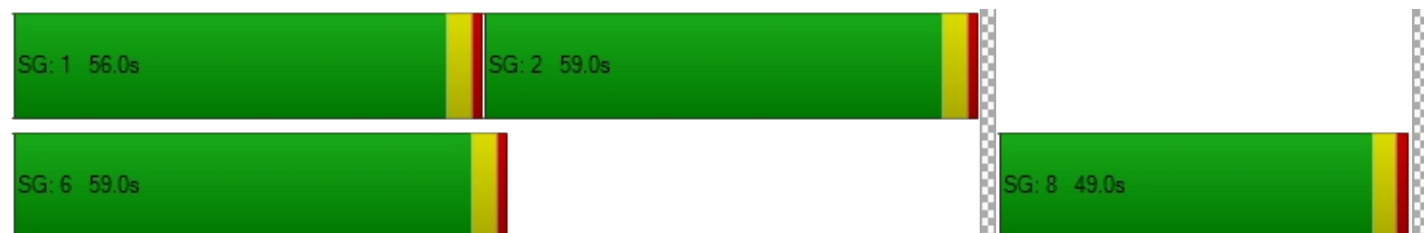
Vehicle Miles Traveled [mph]	13.59	12.00	22.19	10.33	7.68
Stops [stops/h]	289.96	12.51	24.94	84.19	61.02
Fuel consumption [US gal/h]	3.45	0.66	1.22	1.22	0.89
CO [g/h]	240.93	46.08	84.98	85.28	62.02
NOx [g/h]	46.88	8.96	16.53	16.59	12.07
VOC [g/h]	55.84	10.68	19.69	19.77	14.37

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	4436	4436	3629
d_b, Bicycle Delay [s]	18.39	18.39	8.23
I_b,int, Bicycle LOS Score for Intersection	2.177	2.119	1.560
Bicycle LOS	B	B	A

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Laredo Middle School TIS

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Scenario 4 2050 Back AS

Report File: C:\...\2050 Back AS.pdf

3/20/2025

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Smoky Hill Rd/Laredo St	Signalized	HCM 7th Edition	NB Left	0.515	17.1	B
2	Laredo St/Buffalo Way	Signalized	HCM 7th Edition	NB Right	0.407	20.8	C
3	Laredo St/North Parking Lot	Two-way stop	HCM 7th Edition	SB Thru	0.003	0.0	A
4	Laredo St/School Exit	Two-way stop	HCM 7th Edition	SB Thru	0.004	0.0	A
5	Laredo St/School Entrance	Two-way stop	HCM 7th Edition	SB Thru	0.007	0.0	A
6	Laredo St/Bellevue Dr	Two-way stop	HCM 7th Edition	WB Left	0.062	11.8	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Smoky Hill Rd/Laredo St

Control Type:	Signalized	Delay (sec / veh):	17.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.515

Intersection Setup

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↵		↵	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	288.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Base Volume Input [veh/h]	291	282	1064	120	163	920
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.1200	1.0000	1.0000	1.1200
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-65	-66	0	-33	-35	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	108	0	44	0	0
Total Hourly Volume [veh/h]	226	108	1192	43	128	1030
Peak Hour Factor	0.5600	0.5600	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	101	48	324	12	35	280
Total Analysis Volume [veh/h]	404	193	1296	47	139	1120
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	33	0	25	0	16	45
Amber [s]	4.0	0.0	4.0	0.0	3.0	4.0
All red [s]	2.0	0.0	2.0	0.0	1.0	2.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	0.0	4.0	0.0	2.0	4.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	39.0	0.0	31.0	0.0	20.0	51.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
C, Calculated Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	23.5	23.5	45.2	45.2	54.5	54.5
g / C, Green / Cycle	0.26	0.26	0.50	0.50	0.61	0.61
(v / s)_i Volume / Saturation Flow Rate	0.23	0.12	0.25	0.24	0.23	0.22
s, saturation flow rate [veh/h]	1781	1589	3560	1836	592	5094
c, Capacity [veh/h]	464	415	1787	922	407	3086
d1, Uniform Delay [s]	31.80	27.99	14.91	14.76	9.70	8.96
k, delay calibration	0.15	0.11	0.50	0.50	0.32	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.89	0.81	1.01	1.83	1.46	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.47	0.50	0.49	0.34	0.36
d, Delay for Lane Group [s/veh]	38.69	28.80	15.92	16.59	11.16	9.29
Lane Group LOS	D	C	B	B	B	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	9.04	3.52	5.96	6.12	1.21	3.43
50th-Percentile Queue Length [ft/ln]	225.97	88.00	149.04	153.07	30.37	85.73
95th-Percentile Queue Length [veh/ln]	13.97	6.34	9.97	10.18	2.19	6.17
95th-Percentile Queue Length [ft/ln]	349.23	158.40	249.15	254.52	54.67	154.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.69	28.80	16.12	16.59	11.16	9.29
Movement LOS	D	C	B	B	B	A
d_A, Approach Delay [s/veh]	35.49		16.14		9.50	
Approach LOS	D		B		A	
d_I, Intersection Delay [s/veh]	17.14					
Intersection LOS	B					
Intersection V/C	0.515					

Emissions

Vehicle Miles Traveled [mph]	75.32	35.98	82.93	41.47	13.30	107.14
Stops [stops/h]	361.55	140.80	476.94	244.91	48.60	411.51
Fuel consumption [US gal/h]	8.28	3.39	8.95	4.57	1.13	8.80
CO [g/h]	578.69	236.98	625.55	319.55	79.09	615.29
NOx [g/h]	112.59	46.11	121.71	62.17	15.39	119.71
VOC [g/h]	134.12	54.92	144.98	74.06	18.33	142.60

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	733		556		1000	
d_b, Bicycle Delay [s]	18.05		23.47		11.25	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.322		2.252	
Bicycle LOS	A		B		B	

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Laredo St/Bufalo Way

Control Type:	Signalized	Delay (sec / veh):	20.8
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.407

Intersection Setup

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Base Volume Input [veh/h]	119	352	195	72	210	149
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	-131	0	0	-88
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	176	0	36	0	0
Total Hourly Volume [veh/h]	119	176	64	36	210	61
Peak Hour Factor	0.4300	0.4300	0.5000	0.5000	0.7100	0.7100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	69	102	32	18	74	21
Total Analysis Volume [veh/h]	277	409	128	72	296	86
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	36	0	36	0	34	36
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	0.0	14.0	0.0	9.0	14.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	0	6	0	6	6
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	82	82	82	82	82	82
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	24.6	24.6	36.0	36.0	49.7	49.7
g / C, Green / Cycle	0.30	0.30	0.44	0.44	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.16	0.26	0.07	0.05	0.22	0.05
s, saturation flow rate [veh/h]	1781	1589	1870	1589	1320	1870
c, Capacity [veh/h]	534	477	816	694	876	1128
d1, Uniform Delay [s]	23.94	27.22	14.05	13.71	7.79	6.80
k, delay calibration	0.11	0.15	0.50	0.50	0.12	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.78	6.40	0.41	0.30	0.25	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	0.86	0.16	0.10	0.34	0.08
d, Delay for Lane Group [s/veh]	24.72	33.62	14.46	14.01	8.03	6.94
Lane Group LOS	C	C	B	B	A	A
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.42	8.08	1.46	0.81	2.25	0.60
50th-Percentile Queue Length [ft/ln]	110.62	202.01	36.60	20.26	56.37	14.96
95th-Percentile Queue Length [veh/ln]	7.87	12.74	2.64	1.46	4.06	1.08
95th-Percentile Queue Length [ft/ln]	196.86	318.56	65.88	36.47	101.47	26.93

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	24.72	33.62	14.46	14.01	8.03	6.94
Movement LOS	C	C	B	B	A	A
d_A, Approach Delay [s/veh]	30.02		14.30		7.79	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]	20.84					
Intersection LOS	C					
Intersection V/C	0.407					

Emissions

Vehicle Miles Traveled [mph]	7.09	10.46	11.09	6.24	55.18	16.03
Stops [stops/h]	193.54	353.44	64.03	35.45	98.63	26.18
Fuel consumption [US gal/h]	2.75	5.18	1.19	0.66	3.30	0.93
CO [g/h]	192.54	362.18	82.96	45.98	230.71	64.73
NOx [g/h]	37.46	70.47	16.14	8.95	44.89	12.59
VOC [g/h]	44.62	83.94	19.23	10.66	53.47	15.00

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	875		875		875	
d_b, Bicycle Delay [s]	13.03		13.03		13.03	
I_b,int, Bicycle LOS Score for Intersection	1.560		1.949		2.190	
Bicycle LOS	A		A		B	

Sequence




Ring 1	1	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Laredo St/North Parking Lot

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Base Volume Input [veh/h]	218	16	27	242	22	52
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-79	-16	-27	-61	-22	-52
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	139	0	0	181	0	0
Peak Hour Factor	0.5500	0.5500	0.5200	0.5200	0.4300	0.4300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	63	0	0	87	0	0
Total Analysis Volume [veh/h]	253	0	0	348	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.74	0.00	12.77	9.58
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		11.18	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 4: Laredo St/School Exit

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 0.0
Level Of Service: A
Volume to Capacity (v/c): 0.004

Intersection Setup

Name	South Laredo Street		South Laredo Street		School Exit	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑		↑		↶↷	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		School Exit	
Base Volume Input [veh/h]	164	0	0	254	54	79
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-16	0	0	-61	-54	-79
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	148	0	0	193	0	0
Peak Hour Factor	0.8300	0.8500	0.8500	0.5100	0.2800	0.2800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	0	0	95	0	0
Total Analysis Volume [veh/h]	178	0	0	378	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0



Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	12.32	9.16
Movement LOS	A			A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		10.74	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 5: Laredo St/School Entrance

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

Intersection Setup

Name	South Laredo Street		South Laredo Street		South Parking Lot	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		South Parking Lot	
Base Volume Input [veh/h]	149	36	61	546	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-16	-36	-61	-76	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	133	0	0	470	0	1
Peak Hour Factor	0.8000	0.8000	0.6400	0.6400	0.2500	0.2500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	0	0	184	0	1
Total Analysis Volume [veh/h]	166	0	0	734	0	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.00	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.55	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Laredo St/Belleview Dr

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 11.8
Level Of Service: B
Volume to Capacity (v/c): 0.062

Intersection Setup

Name	South Laredo Street		South Laredo Street		East Belleview Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		East Belleview Drive	
Base Volume Input [veh/h]	145	24	20	178	17	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-52	0	0	-76	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	93	24	20	102	17	15
Peak Hour Factor	0.6700	0.6700	0.5500	0.5500	0.4700	0.4700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	9	9	46	9	8
Total Analysis Volume [veh/h]	139	36	36	185	36	32
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.06	0.04
d_M, Delay for Movement [s/veh]	0.00	0.00	7.61	0.00	11.80	9.62
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.06	0.06	0.33	0.33
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.53	1.53	8.15	8.15
d_A, Approach Delay [s/veh]	0.00		1.24		10.77	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.17					
Intersection LOS	B					

Laredo Middle School TIS

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Scenario 5 2050 Total AS

Report File: C:\...\2050 Total AS.pdf

3/21/2025

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Smoky Hill Rd/Laredo St	Signalized	HCM 7th Edition	NB Left	0.633	23.7	C
2	Laredo St/Buffalo Way	Signalized	HCM 7th Edition	NB Right	0.570	19.7	B
3	Laredo St/North Parking Lot	Two-way stop	HCM 7th Edition	WB Left	0.043	22.9	C
6	Laredo St/Bellevue Dr	Two-way stop	HCM 7th Edition	WB Left	0.099	16.0	C
7	Laredo St/School Access	Two-way stop	HCM 7th Edition	WB Left	0.836	67.5	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Smoky Hill Rd/Laredo St

Control Type:	Signalized	Delay (sec / veh):	23.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.633

Intersection Setup

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↑↑		↵↑↑↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	288.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Base Volume Input [veh/h]	291	282	1064	120	163	920
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.1200	1.0000	1.0000	1.1200
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	76	76	0	75	75	0
Diverted Trips [veh/h]	-65	-66	0	-43	-35	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	146	0	76	0	0
Total Hourly Volume [veh/h]	302	146	1192	76	203	1030
Peak Hour Factor	0.5600	0.5600	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	135	65	324	21	55	280
Total Analysis Volume [veh/h]	539	261	1296	83	221	1120
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	33	0	25	0	16	45
Amber [s]	4.0	0.0	4.0	0.0	3.0	4.0
All red [s]	2.0	0.0	2.0	0.0	1.0	2.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	0.0	4.0	0.0	2.0	4.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	39.0	0.0	31.0	0.0	20.0	51.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
C, Calculated Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	29.8	29.8	35.7	35.7	48.2	48.2
g / C, Green / Cycle	0.33	0.33	0.40	0.40	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.30	0.16	0.26	0.25	0.32	0.22
s, saturation flow rate [veh/h]	1781	1589	3560	1812	697	5094
c, Capacity [veh/h]	589	526	1410	718	407	2730
d1, Uniform Delay [s]	28.90	24.11	22.13	21.99	15.75	12.43
k, delay calibration	0.29	0.11	0.50	0.50	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.09	0.73	2.36	4.35	5.11	0.46
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.91	0.50	0.65	0.64	0.54	0.41
d, Delay for Lane Group [s/veh]	42.98	24.84	24.48	26.34	20.86	12.88
Lane Group LOS	D	C	C	C	C	B
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	13.01	4.43	8.02	8.38	2.78	4.29
50th-Percentile Queue Length [ft/ln]	325.19	110.76	200.45	209.44	69.45	107.20
95th-Percentile Queue Length [veh/ln]	18.92	7.88	12.66	13.12	5.00	7.68
95th-Percentile Queue Length [ft/ln]	473.06	197.05	316.54	328.11	125.02	192.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.98	24.84	25.02	26.34	20.86	12.88
Movement LOS	D	C	C	C	C	B
d_A, Approach Delay [s/veh]	37.06		25.10		14.20	
Approach LOS	D		C		B	
d_I, Intersection Delay [s/veh]	23.67					
Intersection LOS	C					
Intersection V/C	0.633					

Emissions

Vehicle Miles Traveled [mph]	100.48	48.66	85.15	42.58	21.14	107.14
Stops [stops/h]	520.30	177.21	641.43	335.10	111.12	514.54
Fuel consumption [US gal/h]	11.73	4.30	11.63	6.07	2.42	10.19
CO [g/h]	819.63	300.67	812.88	424.15	169.34	712.29
NOx [g/h]	159.47	58.50	158.16	82.52	32.95	138.59
VOC [g/h]	189.96	69.68	188.39	98.30	39.25	165.08

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	733		556		1000	
d_b, Bicycle Delay [s]	18.05		23.47		11.25	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.360		2.297	
Bicycle LOS	A		B		B	

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Laredo St/Bufalo Way

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 19.7
Level Of Service: B
Volume to Capacity (v/c): 0.570

Intersection Setup

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↵		↵↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Base Volume Input [veh/h]	119	352	195	72	210	149
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	152	0	0	150
Diverted Trips [veh/h]	0	0	-131	0	0	-88
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	176	0	36	0	0
Total Hourly Volume [veh/h]	119	176	216	36	210	211
Peak Hour Factor	0.4300	0.4300	0.5000	0.5000	0.7100	0.7100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	69	102	108	18	74	74
Total Analysis Volume [veh/h]	277	409	432	72	296	297
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	36	0	36	0	34	36
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	0.0	14.0	0.0	9.0	14.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	0	6	0	6	6
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	82	82	82	82	82	82
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	24.6	24.6	36.0	36.0	49.7	49.7
g / C, Green / Cycle	0.30	0.30	0.44	0.44	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.16	0.26	0.23	0.05	0.27	0.16
s, saturation flow rate [veh/h]	1781	1589	1870	1589	1092	1870
c, Capacity [veh/h]	534	477	816	694	637	1128
d1, Uniform Delay [s]	23.94	27.22	17.02	13.71	7.79	7.72
k, delay calibration	0.11	0.15	0.50	0.50	0.20	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.78	6.40	2.45	0.30	0.99	0.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	0.86	0.53	0.10	0.46	0.26
d, Delay for Lane Group [s/veh]	24.72	33.62	19.47	14.01	8.78	8.29
Lane Group LOS	C	C	B	B	A	A
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.42	8.08	6.16	0.81	2.37	2.36
50th-Percentile Queue Length [ft/ln]	110.62	202.01	154.03	20.26	59.25	59.02
95th-Percentile Queue Length [veh/ln]	7.87	12.74	10.23	1.46	4.27	4.25
95th-Percentile Queue Length [ft/ln]	196.86	318.56	255.80	36.47	106.65	106.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	24.72	33.62	19.47	14.01	8.78	8.29
Movement LOS	C	C	B	B	A	A
d_A, Approach Delay [s/veh]	30.02		18.69		8.53	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]	19.67					
Intersection LOS	B					
Intersection V/C	0.570					

Emissions

Vehicle Miles Traveled [mph]	7.09	10.46	37.42	6.24	55.18	55.37
Stops [stops/h]	193.54	353.44	269.49	35.45	103.66	103.26
Fuel consumption [US gal/h]	2.75	5.18	4.74	0.66	3.37	3.35
CO [g/h]	192.54	362.18	331.40	45.98	235.79	234.22
NOx [g/h]	37.46	70.47	64.48	8.95	45.88	45.57
VOC [g/h]	44.62	83.94	76.81	10.66	54.65	54.28

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	875		875		875	
d_b, Bicycle Delay [s]	13.03		13.03		13.03	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.451		2.538	
Bicycle LOS	A		B		B	

Sequence




Ring 1	1	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Laredo St/North Parking Lot

Control Type:	Two-way stop	Delay (sec / veh):	22.9
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.043

Intersection Setup

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Base Volume Input [veh/h]	218	16	27	242	22	52
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	146	4	6	144	4	6
Diverted Trips [veh/h]	-79	-16	-27	-61	-22	-52
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	285	4	6	325	4	6
Peak Hour Factor	0.5500	0.5500	0.5200	0.5200	0.4300	0.4300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	130	2	3	156	2	3
Total Analysis Volume [veh/h]	518	7	12	625	9	14
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.01	0.00	0.01	0.01	0.04	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	8.50	0.00	22.87	12.26
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.03	0.00	0.22	0.22
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.87	0.00	5.44	5.44
d_A, Approach Delay [s/veh]	0.00		0.16		16.41	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.40					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: Laredo St/Belleview Dr

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 16.0
Level Of Service: C
Volume to Capacity (v/c): 0.099

Intersection Setup

Name	South Laredo Street		Laredo Street		East Belleview Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		Laredo Street		East Belleview Drive	
Base Volume Input [veh/h]	145	24	20	178	17	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	99	0	0	103	0	0
Diverted Trips [veh/h]	-52	0	0	-76	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	192	24	20	205	17	15
Peak Hour Factor	0.6700	0.6700	0.5500	0.5500	0.4700	0.6700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	9	9	93	9	6
Total Analysis Volume [veh/h]	287	36	36	373	36	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results


V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.10	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	7.95	0.00	16.03	11.07
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.06	0.06	0.44	0.44
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.53	1.53	10.97	10.97
d_A, Approach Delay [s/veh]	0.00		0.70		14.15	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.40					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 7: Laredo St/School Access

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 67.5
Level Of Service: F
Volume to Capacity (v/c): 0.836

Intersection Setup

Name	Laredo Street		Laredo Street		New School Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Laredo Street		Laredo Street		New School Access	
Base Volume Input [veh/h]	149	0	0	246	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	95	144	4	99	146
Diverted Trips [veh/h]	-16	0	0	-76	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	137	95	144	174	99	146
Peak Hour Factor	0.4900	0.4900	0.7900	0.7900	0.5000	0.5000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	70	48	46	55	50	73
Total Analysis Volume [veh/h]	280	194	182	220	198	292
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.17	0.00	0.84	0.44
d_M, Delay for Movement [s/veh]	0.00	0.00	8.97	0.00	67.51	14.47
Movement LOS	A	A	A	A	F	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.60	0.00	6.53	2.22
95th-Percentile Queue Length [ft/ln]	0.00	0.00	14.99	0.00	163.21	55.40
d_A, Approach Delay [s/veh]	0.00		4.06		35.90	
Approach LOS	A		A		E	
d_I, Intersection Delay [s/veh]	14.07					
Intersection LOS	F					

Laredo Middle School TIS

Vistro File: C:\...\AS.vistro

Scenario 7 2050 Total AS1

Report File: C:\...\2050 Total AS1.pdf

3/20/2025

Intersection Analysis Summary




ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
7	Laredo St/School Access	Signalized	HCM 7th Edition	WB Left	0.373	9.1	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 7: Laredo St/School Access

Control Type:	Signalized	Delay (sec / veh):	9.1
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.373

Intersection Setup

Name	Laredo Street		Laredo Street		New School Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	Laredo Street		Laredo Street		New School Access	
Base Volume Input [veh/h]	149	0	0	246	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	95	144	4	99	146
Diverted Trips [veh/h]	-16	0	0	-76	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	48	0	0	0	73
Total Hourly Volume [veh/h]	137	47	144	174	99	73
Peak Hour Factor	0.4900	0.4900	0.7900	0.7900	0.5000	0.5000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	70	24	46	55	50	37
Total Analysis Volume [veh/h]	280	96	182	220	198	146
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Flashing Yellow Arrow			No			
Signal Group	2	0	1	6	8	0
Auxiliary Signal Groups						
Maximum Green [s]	55	0	52	55	45	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Walk [s]	5.0	0.0	0.0	5.0	5.0	0.0
Pedestrian Clearance [s]	10.0	0.0	0.0	10.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Detector Location [ft]	40.0	0.0	40.0	40.0	40.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	14.0	0.0	9.0	14.0	9.0	0.0
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	0	5	10	5	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	L	C	L	R
C, Calculated Cycle Length [s]	32	32	32	32	32
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9.7	17.7	17.7	5.9	5.9
g / C, Green / Cycle	0.31	0.56	0.56	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.21	0.15	0.12	0.11	0.09
s, saturation flow rate [veh/h]	1789	1255	1870	1781	1589
c, Capacity [veh/h]	549	863	1049	333	297
d1, Uniform Delay [s]	9.65	3.40	3.46	11.79	11.54
k, delay calibration	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.53	0.12	0.10	1.70	1.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.69	0.21	0.21	0.60	0.49
d, Delay for Lane Group [s/veh]	11.17	3.52	3.56	13.50	12.81
Lane Group LOS	B	A	A	B	B
Critical Lane Group	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.75	0.22	0.27	1.11	0.79
50th-Percentile Queue Length [ft/ln]	43.83	5.61	6.73	27.64	19.71
95th-Percentile Queue Length [veh/ln]	3.16	0.40	0.48	1.99	1.42
95th-Percentile Queue Length [ft/ln]	78.90	10.10	12.11	49.75	35.47

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	11.17	11.17	3.52	3.56	13.50	12.81
Movement LOS	B	B	A	A	B	B
d_A, Approach Delay [s/veh]	11.17		3.54		13.20	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	9.06					
Intersection LOS	A					
Intersection V/C	0.373					

Emissions

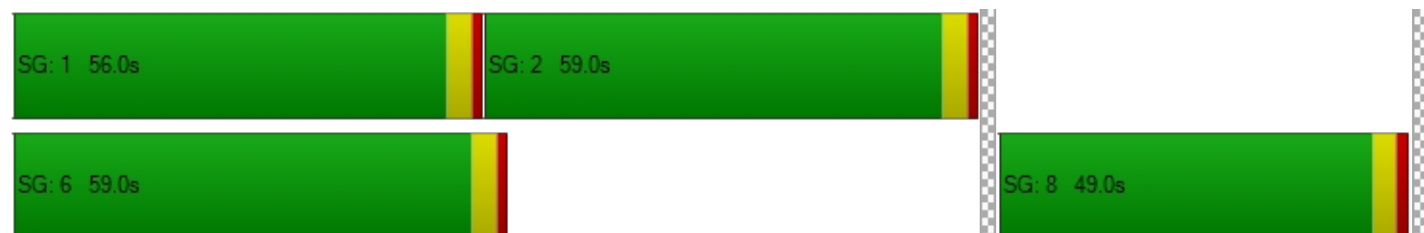
Vehicle Miles Traveled [mph]	14.89	18.36	22.19	13.83	10.19
Stops [stops/h]	199.99	25.59	30.70	126.11	89.91
Fuel consumption [US gal/h]	2.57	1.03	1.24	1.81	1.30
CO [g/h]	179.87	71.84	86.86	126.52	90.66
NOx [g/h]	35.00	13.98	16.90	24.62	17.64
VOC [g/h]	41.69	16.65	20.13	29.32	21.01

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	3485	3485	2852
d_b, Bicycle Delay [s]	8.70	8.70	2.86
I_b,int, Bicycle LOS Score for Intersection	2.259	2.223	1.560
Bicycle LOS	B	B	A

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Evening Peak Hour

Laredo Middle School TIS

Vistro File: C:\...\PM.vistro
Report File: C:\...\2025 PM.pdf

Scenario 1 2025 PM
3/20/2025

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Smoky Hill Rd/Laredo St	Signalized	HCM 7th Edition	NB Right	0.552	7.9	A
2	Laredo St/Buffalo Way	Signalized	HCM 7th Edition	NB Left	0.095	5.0	A
3	Laredo St/North Parking Lot	Two-way stop	HCM 7th Edition	WB Left	0.003	10.5	B
4	Laredo St/School Exit	Two-way stop	HCM 7th Edition	WB Left	0.082	9.9	A
5	Laredo St/School Entrance	Two-way stop	HCM 7th Edition	SB Left	0.026	7.5	A
6	Laredo St/Bellevue Dr	Two-way stop	HCM 7th Edition	WB Left	0.022	10.4	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Smoky Hill Rd/Laredo St

Control Type:	Signalized	Delay (sec / veh):	7.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.552

Intersection Setup

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↑↑		↵↑↑↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	288.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Base Volume Input [veh/h]	75	141	1069	66	124	2322
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	71	0	33	0	0
Total Hourly Volume [veh/h]	75	70	1069	33	124	2322
Peak Hour Factor	0.6600	0.6600	0.9700	0.9700	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	27	276	9	33	618
Total Analysis Volume [veh/h]	114	106	1102	34	132	2470
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	33	0	25	0	6	35
Amber [s]	4.0	0.0	4.0	0.0	3.0	4.0
All red [s]	2.0	0.0	2.0	0.0	1.0	2.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	0.0	4.0	0.0	2.0	4.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	39.0	0.0	31.0	0.0	10.0	41.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
C, Calculated Cycle Length [s]	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	7.9	7.9	51.3	51.3	60.1	60.1
g / C, Green / Cycle	0.10	0.10	0.64	0.64	0.75	0.75
(v / s)_i Volume / Saturation Flow Rate	0.06	0.07	0.21	0.21	0.21	0.48
s, saturation flow rate [veh/h]	1781	1589	3560	1841	640	5094
c, Capacity [veh/h]	178	159	2281	1179	560	3820
d1, Uniform Delay [s]	34.61	34.71	6.56	6.51	3.35	4.86
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.78	4.73	0.39	0.72	0.22	0.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.64	0.67	0.33	0.32	0.24	0.65
d, Delay for Lane Group [s/veh]	38.39	39.44	6.96	7.23	3.57	5.71
Lane Group LOS	D	D	A	A	A	A
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.27	2.15	2.57	2.66	0.41	4.55
50th-Percentile Queue Length [ft/ln]	56.85	53.87	64.24	66.49	10.31	113.71
95th-Percentile Queue Length [veh/ln]	4.09	3.88	4.62	4.79	0.74	8.05
95th-Percentile Queue Length [ft/ln]	102.32	96.96	115.62	119.69	18.56	201.16

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.39	39.44	7.04	7.23	3.57	5.71
Movement LOS	D	D	A	A	A	A
d_A, Approach Delay [s/veh]	38.90		7.05		5.61	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	7.87					
Intersection LOS	A					
Intersection V/C	0.552					

Emissions

Vehicle Miles Traveled [mph]	21.25	19.76	70.15	35.07	12.63	236.29
Stops [stops/h]	102.32	96.96	231.25	119.69	18.56	614.06
Fuel consumption [US gal/h]	2.33	2.20	5.24	2.66	0.72	15.99
CO [g/h]	162.92	153.77	366.11	186.08	50.21	1117.88
NOx [g/h]	31.70	29.92	71.23	36.20	9.77	217.50
VOC [g/h]	37.76	35.64	84.85	43.13	11.64	259.08

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	825		625		875	
d_b, Bicycle Delay [s]	13.81		18.91		12.66	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.203		2.991	
Bicycle LOS	A		B		C	

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Laredo St/Bufalo Way

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 5.0
Level Of Service: A
Volume to Capacity (v/c): 0.095

Intersection Setup

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↵		↵↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Base Volume Input [veh/h]	17	25	95	29	66	72
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	13	0	15	0	0
Total Hourly Volume [veh/h]	17	12	95	14	66	72
Peak Hour Factor	0.8800	0.8800	0.6700	0.6700	0.8600	0.8600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	3	35	5	19	21
Total Analysis Volume [veh/h]	19	14	142	21	77	84
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	41	0	51	0	48	51
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	0.0	14.0	0.0	9.0	14.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	0	6	0	6	6
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	71	71	71	71	71	71
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	2.9	2.9	51.0	51.0	59.7	59.7
g / C, Green / Cycle	0.04	0.04	0.72	0.72	0.85	0.85
(v / s)_i Volume / Saturation Flow Rate	0.01	0.01	0.08	0.01	0.06	0.04
s, saturation flow rate [veh/h]	1781	1589	1870	1589	1284	1870
c, Capacity [veh/h]	75	67	1347	1145	1205	1580
d1, Uniform Delay [s]	32.82	32.76	2.99	2.80	0.89	0.89
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.75	1.53	0.16	0.03	0.02	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.25	0.21	0.11	0.02	0.06	0.05
d, Delay for Lane Group [s/veh]	34.58	34.30	3.15	2.83	0.91	0.96
Lane Group LOS	C	C	A	A	A	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.34	0.25	0.45	0.06	0.02	0.04
50th-Percentile Queue Length [ft/ln]	8.56	6.34	11.37	1.60	0.49	1.03
95th-Percentile Queue Length [veh/ln]	0.62	0.46	0.82	0.12	0.03	0.07
95th-Percentile Queue Length [ft/ln]	15.41	11.41	20.47	2.89	0.87	1.85

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.58	34.30	3.15	2.83	0.91	0.96
Movement LOS	C	C	A	A	A	A
d_A, Approach Delay [s/veh]	34.46		3.11		0.93	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	5.03					
Intersection LOS	A					
Intersection V/C	0.095					

Emissions

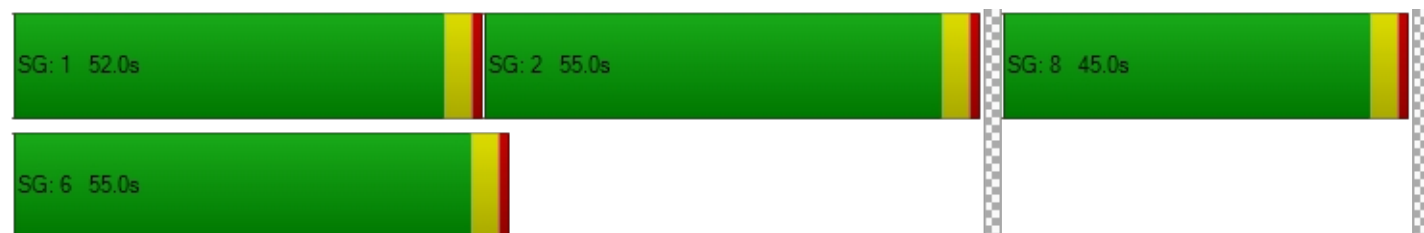
Vehicle Miles Traveled [mph]	0.49	0.36	12.30	1.82	14.35	15.66
Stops [stops/h]	17.45	12.92	23.18	3.27	0.99	2.10
Fuel consumption [US gal/h]	0.25	0.18	0.73	0.11	0.61	0.67
CO [g/h]	17.48	12.85	50.71	7.34	42.69	47.01
NOx [g/h]	3.40	2.50	9.87	1.43	8.31	9.15
VOC [g/h]	4.05	2.98	11.75	1.70	9.89	10.90

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1160		1443		1443	
d_b, Bicycle Delay [s]	6.23		2.74		2.74	
I_b,int, Bicycle LOS Score for Intersection	1.560		1.853		1.825	
Bicycle LOS	A		A		A	

Sequence

Ring 1	1	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-






Intersection Level Of Service Report

Intersection 3: Laredo St/North Parking Lot

Control Type:	Two-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Base Volume Input [veh/h]	116	1	6	83	1	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	116	1	6	83	1	11
Peak Hour Factor	0.6400	0.6400	0.6700	0.6700	0.6000	0.6000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	0	2	31	0	5
Total Analysis Volume [veh/h]	181	2	9	124	2	18
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	7.60	0.00	10.51	9.29
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.00	0.07	0.07
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.49	0.00	1.84	1.84
d_A, Approach Delay [s/veh]	0.00		0.51		9.41	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.76					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 4: Laredo St/School Exit

Control Type:	Two-way stop	Delay (sec / veh):	9.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.082

Intersection Setup

Name	South Laredo Street		South Laredo Street		School Exit	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑		↑		↶↷	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		School Exit	
Base Volume Input [veh/h]	83	0	0	85	20	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	83	0	0	85	20	34
Peak Hour Factor	0.9000	0.8500	0.8500	0.8500	0.3100	0.3100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	0	0	25	16	27
Total Analysis Volume [veh/h]	92	0	0	100	65	110
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0



Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.08	0.11
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	9.92	9.21
Movement LOS	A			A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.27	0.38
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	6.64	9.61
d_A, Approach Delay [s/veh]	0.00		0.00		9.47	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.52					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 5: Laredo St/School Entrance

Control Type:	Two-way stop	Delay (sec / veh):	7.5
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.026

Intersection Setup

Name	South Laredo Street		South Laredo Street		South Parking Lot	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		South Parking Lot	
Base Volume Input [veh/h]	81	20	24	81	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	81	20	24	81	0	1
Peak Hour Factor	0.7900	0.7900	0.6400	0.6400	0.2500	0.2500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	6	9	32	0	1
Total Analysis Volume [veh/h]	103	25	38	127	0	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.00	0.00	0.03	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.54	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.08	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2.01	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		1.74		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.98					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Laredo St/Belleview Dr

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 10.4
Level Of Service: B
Volume to Capacity (v/c): 0.022

Intersection Setup

Name	South Laredo Street		South Laredo Street		East Belleview Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		East Belleview Drive	
Base Volume Input [veh/h]	69	12	22	107	11	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	69	12	22	107	11	15
Peak Hour Factor	0.8400	0.8400	0.7900	0.7900	0.7200	0.7200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	4	7	34	4	5
Total Analysis Volume [veh/h]	82	14	28	135	15	21
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.02	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	7.44	0.00	10.37	8.91
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.05	0.05	0.14	0.14
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.18	1.18	3.38	3.38
d_A, Approach Delay [s/veh]	0.00		1.28		9.52	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.87					
Intersection LOS	B					

Laredo Middle School TIS

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Scenario 2 2027 Back PM

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3/20/2025

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Smoky Hill Rd/Laredo St	Signalized	HCM 7th Edition	NB Right	0.549	7.3	A
2	Laredo St/Buffalo Way	Signalized	HCM 7th Edition	NB Left	0.070	5.8	A
3	Laredo St/North Parking Lot	Two-way stop	HCM 7th Edition	NB Thru	0.001	0.0	A
4	Laredo St/School Exit	Two-way stop	HCM 7th Edition	NB Thru	0.001	0.0	A
5	Laredo St/School Entrance	Two-way stop	HCM 7th Edition	NB Thru	0.001	0.0	A
6	Laredo St/Bellevue Dr	Two-way stop	HCM 7th Edition	WB Left	0.020	10.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Smoky Hill Rd/Laredo St

Control Type:	Signalized	Delay (sec / veh):	7.3
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.549

Intersection Setup

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↑↑		↵↑↑↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	288.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Base Volume Input [veh/h]	75	141	1069	66	124	2322
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0100	1.0000	1.0000	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-15	-16	0	-15	-15	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	63	0	26	0	0
Total Hourly Volume [veh/h]	60	62	1080	25	109	2345
Peak Hour Factor	0.6600	0.6600	0.9700	0.9700	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	23	278	6	29	624
Total Analysis Volume [veh/h]	91	94	1113	26	116	2495
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	33	0	25	0	6	35
Amber [s]	4.0	0.0	4.0	0.0	3.0	4.0
All red [s]	2.0	0.0	2.0	0.0	1.0	2.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	0.0	4.0	0.0	2.0	4.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	39.0	0.0	31.0	0.0	10.0	41.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
C, Calculated Cycle Length [s]	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	7.2	7.2	52.2	52.2	60.8	60.8
g / C, Green / Cycle	0.09	0.09	0.65	0.65	0.76	0.76
(v / s)_i Volume / Saturation Flow Rate	0.05	0.06	0.21	0.21	0.18	0.49
s, saturation flow rate [veh/h]	1781	1589	3560	1848	634	5094
c, Capacity [veh/h]	161	144	2319	1204	563	3868
d1, Uniform Delay [s]	34.86	35.16	6.18	6.12	3.08	4.54
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.06	4.91	0.38	0.69	0.18	0.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.56	0.65	0.33	0.32	0.21	0.65
d, Delay for Lane Group [s/veh]	37.92	40.07	6.55	6.80	3.26	5.38
Lane Group LOS	D	D	A	A	A	A
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.80	1.93	2.46	2.54	0.33	4.29
50th-Percentile Queue Length [ft/ln]	45.02	48.23	61.44	63.57	8.28	107.14
95th-Percentile Queue Length [veh/ln]	3.24	3.47	4.42	4.58	0.60	7.68
95th-Percentile Queue Length [ft/ln]	81.03	86.82	110.59	114.43	14.91	192.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.92	40.07	6.63	6.80	3.26	5.38
Movement LOS	D	D	A	A	A	A
d_A, Approach Delay [s/veh]	39.01		6.64		5.29	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	7.26					
Intersection LOS	A					
Intersection V/C	0.549					

Emissions

Vehicle Miles Traveled [mph]	16.96	17.52	70.33	35.17	11.10	238.68
Stops [stops/h]	81.03	86.82	221.17	114.43	14.91	578.58
Fuel consumption [US gal/h]	1.85	1.97	5.13	2.61	0.62	15.75
CO [g/h]	129.20	137.53	358.60	182.14	43.07	1101.27
NOx [g/h]	25.14	26.76	69.77	35.44	8.38	214.27
VOC [g/h]	29.94	31.87	83.11	42.21	9.98	255.23

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	825		625		875	
d_b, Bicycle Delay [s]	13.81		18.91		12.66	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.200		2.996	
Bicycle LOS	A		B		C	

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Laredo St/Bufalo Way

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 5.8
Level Of Service: A
Volume to Capacity (v/c): 0.070

Intersection Setup

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↵		↵↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Base Volume Input [veh/h]	17	25	95	29	66	72
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	-31	0	0	-30
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	13	0	15	0	0
Total Hourly Volume [veh/h]	17	12	64	14	66	42
Peak Hour Factor	0.8800	0.8800	0.6700	0.6700	0.8600	0.8600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	3	24	5	19	12
Total Analysis Volume [veh/h]	19	14	96	21	77	49
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	41	0	51	0	48	51
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	0.0	14.0	0.0	9.0	14.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	0	6	0	6	6
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	71	71	71	71	71	71
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	2.9	2.9	51.0	51.0	59.7	59.7
g / C, Green / Cycle	0.04	0.04	0.72	0.72	0.85	0.85
(v / s)_i Volume / Saturation Flow Rate	0.01	0.01	0.05	0.01	0.06	0.03
s, saturation flow rate [veh/h]	1781	1589	1870	1589	1331	1870
c, Capacity [veh/h]	75	67	1347	1145	1254	1580
d1, Uniform Delay [s]	32.82	32.76	2.91	2.80	0.89	0.87
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.75	1.53	0.10	0.03	0.02	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.25	0.21	0.07	0.02	0.06	0.03
d, Delay for Lane Group [s/veh]	34.58	34.30	3.02	2.83	0.91	0.91
Lane Group LOS	C	C	A	A	A	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.34	0.25	0.30	0.06	0.02	0.02
50th-Percentile Queue Length [ft/ln]	8.56	6.34	7.48	1.60	0.48	0.59
95th-Percentile Queue Length [veh/ln]	0.62	0.46	0.54	0.12	0.03	0.04
95th-Percentile Queue Length [ft/ln]	15.41	11.41	13.46	2.89	0.86	1.06

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.58	34.30	3.02	2.83	0.91	0.91
Movement LOS	C	C	A	A	A	A
d_A, Approach Delay [s/veh]	34.46		2.98		0.91	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	5.80					
Intersection LOS	A					
Intersection V/C	0.070					

Emissions

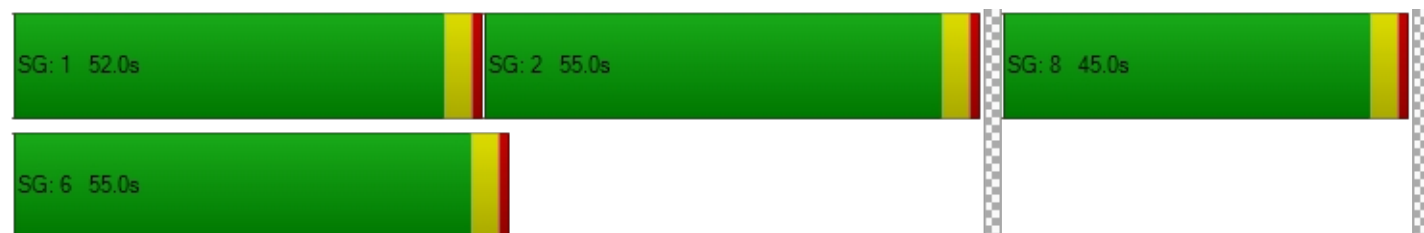
Vehicle Miles Traveled [mph]	0.49	0.36	8.32	1.82	14.35	9.13
Stops [stops/h]	17.45	12.92	15.24	3.27	0.97	1.20
Fuel consumption [US gal/h]	0.25	0.18	0.49	0.11	0.61	0.39
CO [g/h]	17.48	12.85	33.94	7.34	42.68	27.38
NOx [g/h]	3.40	2.50	6.60	1.43	8.30	5.33
VOC [g/h]	4.05	2.98	7.86	1.70	9.89	6.35

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1160		1443		1443	
d_b, Bicycle Delay [s]	6.23		2.74		2.74	
I_b,int, Bicycle LOS Score for Intersection	1.560		1.777		1.768	
Bicycle LOS	A		A		A	

Sequence




Ring 1	1	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Laredo St/North Parking Lot

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.001

Intersection Setup

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Base Volume Input [veh/h]	116	1	6	83	1	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-21	-1	-6	-24	-1	-11
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	95	0	0	59	0	0
Peak Hour Factor	0.6400	0.6400	0.6700	0.6700	0.6000	0.6000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	0	0	22	0	0
Total Analysis Volume [veh/h]	148	0	0	88	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.51	0.00	9.79	9.01
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		9.40	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 4: Laredo St/School Exit

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.001

Intersection Setup

Name	South Laredo Street		South Laredo Street		School Exit	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑		↑		↶↷	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		School Exit	
Base Volume Input [veh/h]	83	0	0	85	20	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-1	0	0	-25	-20	-34
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	82	0	0	60	0	0
Peak Hour Factor	0.9000	0.8500	0.8500	0.8500	0.3100	0.3100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	0	0	18	0	0
Total Analysis Volume [veh/h]	91	0	0	71	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0



Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	9.34	8.72
Movement LOS	A			A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		9.03	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 5: Laredo St/School Entrance

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.001

Intersection Setup

Name	South Laredo Street		South Laredo Street		South Parking Lot	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		South Parking Lot	
Base Volume Input [veh/h]	81	20	24	81	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-1	-20	-24	-21	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	0	0	60	0	1
Peak Hour Factor	0.7900	0.7900	0.6400	0.6400	0.2500	0.2500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	0	0	23	0	1
Total Analysis Volume [veh/h]	101	0	0	94	0	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.41	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Laredo St/Belleview Dr

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 10.0
Level Of Service: B
Volume to Capacity (v/c): 0.020

Intersection Setup

Name	South Laredo Street		South Laredo Street		East Belleview Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		East Belleview Drive	
Base Volume Input [veh/h]	69	12	22	107	11	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-21	0	0	-21	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	12	22	86	11	15
Peak Hour Factor	0.8400	0.8400	0.7900	0.7900	0.7200	0.7200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	4	7	27	4	5
Total Analysis Volume [veh/h]	57	14	28	109	15	21
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.02	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	7.39	0.00	10.01	8.78
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.05	0.05	0.13	0.13
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.18	1.18	3.21	3.21
d_A, Approach Delay [s/veh]	0.00		1.51		9.29	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.22					
Intersection LOS	B					

Laredo Middle School TIS

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Scenario 3 2027 Total PM

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3/20/2025

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Smoky Hill Rd/Laredo St	Signalized	HCM 7th Edition	NB Right	0.560	8.2	A
2	Laredo St/Buffalo Way	Signalized	HCM 7th Edition	NB Left	0.104	4.9	A
3	Laredo St/North Parking Lot	Two-way stop	HCM 7th Edition	NB Thru	0.002	0.0	A
6	Laredo St/Bellevue Dr	Two-way stop	HCM 7th Edition	WB Left	0.062	21.3	C
7	Laredo St/School Access	Two-way stop	HCM 7th Edition	WB Left	0.089	11.3	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Smoky Hill Rd/Laredo St

Control Type:	Signalized	Delay (sec / veh):	8.2
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.560

Intersection Setup

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↵		↵	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	288.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Base Volume Input [veh/h]	75	141	1069	66	124	2322
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0100	1.0000	1.0000	1.0100
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	21	21	0	20	20	0
Diverted Trips [veh/h]	-15	-16	0	-15	-15	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	73	0	36	0	0
Total Hourly Volume [veh/h]	81	73	1080	35	129	2345
Peak Hour Factor	0.6600	0.6600	0.9700	0.9700	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	28	278	9	34	624
Total Analysis Volume [veh/h]	123	111	1113	36	137	2495
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	33	0	25	0	6	35
Amber [s]	4.0	0.0	4.0	0.0	3.0	4.0
All red [s]	2.0	0.0	2.0	0.0	1.0	2.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	0.0	4.0	0.0	2.0	4.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	39.0	0.0	31.0	0.0	10.0	41.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
C, Calculated Cycle Length [s]	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	8.2	8.2	51.0	51.0	59.8	59.8
g / C, Green / Cycle	0.10	0.10	0.64	0.64	0.75	0.75
(v / s)_i Volume / Saturation Flow Rate	0.07	0.07	0.22	0.21	0.22	0.49
s, saturation flow rate [veh/h]	1781	1589	3560	1839	636	5094
c, Capacity [veh/h]	185	165	2266	1171	554	3801
d1, Uniform Delay [s]	34.50	34.53	6.74	6.68	3.49	5.05
k, delay calibration	0.11	0.11	0.50	0.50	0.13	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.06	4.68	0.41	0.75	0.28	0.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.66	0.67	0.34	0.33	0.25	0.66
d, Delay for Lane Group [s/veh]	38.56	39.21	7.14	7.42	3.77	5.95
Lane Group LOS	D	D	A	A	A	A
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.46	2.25	2.65	2.75	0.45	4.78
50th-Percentile Queue Length [ft/ln]	61.52	56.22	66.34	68.67	11.24	119.61
95th-Percentile Queue Length [veh/ln]	4.43	4.05	4.78	4.94	0.81	8.37
95th-Percentile Queue Length [ft/ln]	110.74	101.20	119.42	123.60	20.24	209.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.56	39.21	7.23	7.42	3.77	5.95
Movement LOS	D	D	A	A	A	A
d_A, Approach Delay [s/veh]	38.87		7.24		5.84	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	8.16					
Intersection LOS	A					
Intersection V/C	0.560					

Emissions

Vehicle Miles Traveled [mph]	22.93	20.69	70.95	35.48	13.11	238.68
Stops [stops/h]	110.74	101.20	238.83	123.60	20.24	645.90
Fuel consumption [US gal/h]	2.52	2.30	5.35	2.72	0.76	16.42
CO [g/h]	176.22	160.54	374.24	190.27	52.87	1147.57
NOx [g/h]	34.29	31.24	72.81	37.02	10.29	223.28
VOC [g/h]	40.84	37.21	86.73	44.10	12.25	265.96

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	825		625		875	
d_b, Bicycle Delay [s]	13.81		18.91		12.66	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.211		3.007	
Bicycle LOS	A		B		C	

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Laredo St/Bufalo Way

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 4.9
Level Of Service: A
Volume to Capacity (v/c): 0.104

Intersection Setup

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↵		↵↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Base Volume Input [veh/h]	17	25	95	29	66	72
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	42	0	0	40
Diverted Trips [veh/h]	0	0	-31	0	0	-30
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	13	0	15	0	0
Total Hourly Volume [veh/h]	17	12	106	14	66	82
Peak Hour Factor	0.8800	0.8800	0.6700	0.6700	0.8600	0.8600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	3	40	5	19	24
Total Analysis Volume [veh/h]	19	14	158	21	77	95
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	41	0	51	0	48	51
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	0.0	14.0	0.0	9.0	14.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	0	6	0	6	6
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	71	71	71	71	71	71
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	2.9	2.9	51.0	51.0	59.7	59.7
g / C, Green / Cycle	0.04	0.04	0.72	0.72	0.85	0.85
(v / s)_i Volume / Saturation Flow Rate	0.01	0.01	0.08	0.01	0.06	0.05
s, saturation flow rate [veh/h]	1781	1589	1870	1589	1269	1870
c, Capacity [veh/h]	75	67	1347	1145	1189	1580
d1, Uniform Delay [s]	32.82	32.76	3.02	2.80	0.89	0.90
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.75	1.53	0.18	0.03	0.02	0.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.25	0.21	0.12	0.02	0.06	0.06
d, Delay for Lane Group [s/veh]	34.58	34.30	3.20	2.83	0.91	0.97
Lane Group LOS	C	C	A	A	A	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.34	0.25	0.51	0.06	0.02	0.05
50th-Percentile Queue Length [ft/ln]	8.56	6.34	12.78	1.60	0.49	1.17
95th-Percentile Queue Length [veh/ln]	0.62	0.46	0.92	0.12	0.04	0.08
95th-Percentile Queue Length [ft/ln]	15.41	11.41	23.00	2.89	0.88	2.11

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.58	34.30	3.20	2.83	0.91	0.97
Movement LOS	C	C	A	A	A	A
d_A, Approach Delay [s/veh]	34.46		3.15		0.94	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	4.85					
Intersection LOS	A					
Intersection V/C	0.104					

Emissions

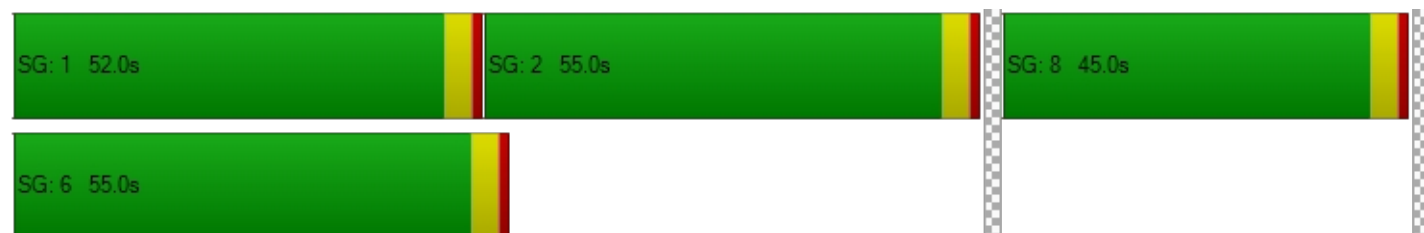
Vehicle Miles Traveled [mph]	0.49	0.36	13.69	1.82	14.35	17.71
Stops [stops/h]	17.45	12.92	26.05	3.27	0.99	2.39
Fuel consumption [US gal/h]	0.25	0.18	0.81	0.11	0.61	0.76
CO [g/h]	17.48	12.85	56.63	7.34	42.69	53.20
NOx [g/h]	3.40	2.50	11.02	1.43	8.31	10.35
VOC [g/h]	4.05	2.98	13.12	1.70	9.89	12.33

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1160		1443		1443	
d_b, Bicycle Delay [s]	6.23		2.74		2.74	
I_b,int, Bicycle LOS Score for Intersection	1.560		1.880		1.843	
Bicycle LOS	A		A		A	

Sequence




Ring 1	1	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Laredo St/North Parking Lot

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Base Volume Input [veh/h]	116	1	6	83	1	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	42	0	0	40	0	0
Diverted Trips [veh/h]	-20	-1	-6	-24	-1	-11
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	138	0	0	99	0	0
Peak Hour Factor	0.6400	0.6400	0.6700	0.6700	0.6000	0.6000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	0	0	37	0	0
Total Analysis Volume [veh/h]	216	0	0	148	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.66	0.00	10.67	9.37
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		10.02	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Laredo St/Belleview Dr

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 21.3
Level Of Service: C
Volume to Capacity (v/c): 0.062

Intersection Setup

Name	South Laredo Street		Laredo Street		East Belleview Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		Laredo Street		East Belleview Drive	
Base Volume Input [veh/h]	357	12	10	204	11	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	26	0	0	28	0	0
Diverted Trips [veh/h]	-21	0	0	-21	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	362	12	10	211	11	15
Peak Hour Factor	0.4700	0.8400	0.8100	0.8100	0.7200	0.6700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	193	4	3	65	4	6
Total Analysis Volume [veh/h]	770	14	12	260	15	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0



Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.06	0.06
d_M, Delay for Movement [s/veh]	0.00	0.00	9.33	0.00	21.28	15.57
Movement LOS	A	A	A	A	C	C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.02	0.39	0.39
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.50	0.50	9.83	9.83
d_A, Approach Delay [s/veh]	0.00		0.41		17.89	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.71					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 7: Laredo St/School Access

Control Type:	Two-way stop	Delay (sec / veh):	11.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.089

Intersection Setup

Name	Laredo Street		Laredo Street		New School Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Laredo Street		Laredo Street		New School Access	
Base Volume Input [veh/h]	81	20	24	81	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	26	40	0	28	42
Diverted Trips [veh/h]	-1	-20	-24	-21	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	26	40	60	28	42
Peak Hour Factor	0.7900	0.7900	0.6400	0.6400	0.5000	0.5000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	8	16	23	14	21
Total Analysis Volume [veh/h]	101	33	63	94	56	84
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.04	0.00	0.09	0.09
d_M, Delay for Movement [s/veh]	0.00	0.00	7.59	0.00	11.28	9.23
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.14	0.00	0.29	0.30
95th-Percentile Queue Length [ft/ln]	0.00	0.00	3.40	0.00	7.29	7.39
d_A, Approach Delay [s/veh]	0.00		3.05		10.05	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	4.37					
Intersection LOS	B					

Laredo Middle School TIS

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Scenario 7 2050 Total PM1

Report File: C:\...\2027 Total PM1.pdf

3/21/2025

Intersection Analysis Summary




ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
7	Laredo St/School Access	Signalized	HCM 7th Edition	WB Left	0.124	14.1	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 7: Laredo St/School Access

Control Type:	Signalized	Delay (sec / veh):	14.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.124

Intersection Setup

Name	Laredo Street		Laredo Street		New School Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	Laredo Street		Laredo Street		New School Access	
Base Volume Input [veh/h]	81	20	24	81	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	34	52	0	38	56
Diverted Trips [veh/h]	-1	-20	-24	-21	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	17	0	0	0	28
Total Hourly Volume [veh/h]	80	17	52	60	38	28
Peak Hour Factor	0.7900	0.7900	0.6400	0.6400	0.4500	0.4500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	5	20	23	21	16
Total Analysis Volume [veh/h]	101	22	81	94	84	62
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Flashing Yellow Arrow			No			
Signal Group	2	0	1	6	8	0
Auxiliary Signal Groups						
Maximum Green [s]	55	0	52	55	45	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Walk [s]	5.0	0.0	0.0	5.0	5.0	0.0
Pedestrian Clearance [s]	10.0	0.0	0.0	10.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	40.0	40.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	14.0	0.0	9.0	14.0	9.0	0.0
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	0	5	10	5	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	Yes		No	Yes	No	
Pedestrian Recall	No		No	No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	L	C	L	R
C, Calculated Cycle Length [s]	77	77	77	77	77
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	55.0	63.2	63.2	5.9	5.9
g / C, Green / Cycle	0.71	0.82	0.82	0.08	0.08
(v / s)_i Volume / Saturation Flow Rate	0.07	0.06	0.05	0.05	0.04
s, saturation flow rate [veh/h]	1813	1317	1870	1781	1589
c, Capacity [veh/h]	1292	1188	1532	137	122
d1, Uniform Delay [s]	3.42	1.32	1.32	34.51	34.22
k, delay calibration	0.50	0.11	0.50	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.15	0.02	0.08	4.40	3.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.10	0.07	0.06	0.61	0.51
d, Delay for Lane Group [s/veh]	3.57	1.34	1.40	38.91	37.45
Lane Group LOS	A	A	A	D	D
Critical Lane Group	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.48	0.09	0.13	1.66	1.20
50th-Percentile Queue Length [ft/ln]	12.01	2.25	3.21	41.40	29.98
95th-Percentile Queue Length [veh/ln]	0.86	0.16	0.23	2.98	2.16
95th-Percentile Queue Length [ft/ln]	21.61	4.05	5.78	74.53	53.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	3.57	3.57	1.34	1.40	38.91	37.45
Movement LOS	A	A	A	A	D	D
d_A, Approach Delay [s/veh]	3.57		1.37		38.29	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	14.12					
Intersection LOS	B					
Intersection V/C	0.124					

Emissions

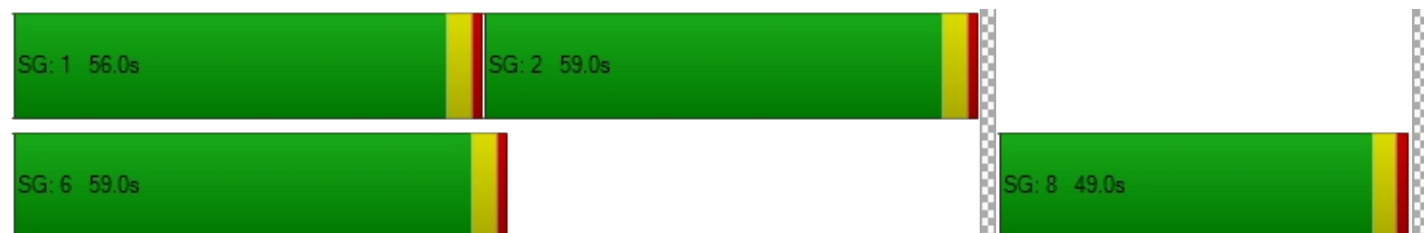
Vehicle Miles Traveled [mph]	4.87	8.17	9.48	5.87	4.33
Stops [stops/h]	22.44	4.21	6.00	77.38	56.03
Fuel consumption [US gal/h]	0.41	0.38	0.45	1.33	0.96
CO [g/h]	28.92	26.68	31.48	93.25	67.12
NOx [g/h]	5.63	5.19	6.12	18.14	13.06
VOC [g/h]	6.70	6.18	7.30	21.61	15.56

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1428	1428	1168
d_b, Bicycle Delay [s]	3.15	3.15	6.67
I_b,int, Bicycle LOS Score for Intersection	1.791	1.848	1.560
Bicycle LOS	A	A	A

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Laredo Middle School TIS

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Scenario 4 2050 Back PM

Report File: C:\...\2050 Back PM.pdf

3/20/2025

Intersection Analysis Summary




ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Smoky Hill Rd/Laredo St	Signalized	HCM 7th Edition	NB Right	0.602	7.8	A
2	Laredo St/Buffalo Way	Signalized	HCM 7th Edition	NB Left	0.070	5.8	A
3	Laredo St/North Parking Lot	Two-way stop	HCM 7th Edition	NB Thru	0.002	0.0	A
4	Laredo St/School Exit	Two-way stop	HCM 7th Edition	SB Thru	0.001	0.0	A
5	Laredo St/School Entrance	Two-way stop	HCM 7th Edition	NB Thru	0.001	0.0	A
6	Laredo St/Bellevue Dr	Two-way stop	HCM 7th Edition	WB Left	0.020	10.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Smoky Hill Rd/Laredo St

Control Type:	Signalized	Delay (sec / veh):	7.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.602

Intersection Setup

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	288.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Base Volume Input [veh/h]	75	141	1069	66	124	2322
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.1200	1.0000	1.0000	1.1200
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-15	-16	0	-15	-15	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	63	0	26	0	0
Total Hourly Volume [veh/h]	60	62	1197	25	109	2601
Peak Hour Factor	0.6600	0.6600	0.9700	0.9700	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	23	309	6	29	692
Total Analysis Volume [veh/h]	91	94	1234	26	116	2767
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	33	0	25	0	6	35
Amber [s]	4.0	0.0	4.0	0.0	3.0	4.0
All red [s]	2.0	0.0	2.0	0.0	1.0	2.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	0.0	4.0	0.0	2.0	4.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	39.0	0.0	31.0	0.0	10.0	41.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
C, Calculated Cycle Length [s]	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	7.2	7.2	52.2	52.2	60.8	60.8
g / C, Green / Cycle	0.09	0.09	0.65	0.65	0.76	0.76
(v / s)_i Volume / Saturation Flow Rate	0.05	0.06	0.24	0.23	0.20	0.54
s, saturation flow rate [veh/h]	1781	1589	3560	1850	587	5094
c, Capacity [veh/h]	161	144	2319	1205	527	3868
d1, Uniform Delay [s]	34.86	35.16	6.36	6.29	3.27	5.07
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	3.06	4.91	0.44	0.80	0.21	1.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.56	0.65	0.36	0.35	0.22	0.72
d, Delay for Lane Group [s/veh]	37.92	40.07	6.80	7.08	3.48	6.23
Lane Group LOS	D	D	A	A	A	A
Critical Lane Group	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	1.80	1.93	2.80	2.90	0.33	5.35
50th-Percentile Queue Length [ft/ln]	45.02	48.23	70.06	72.42	8.34	133.76
95th-Percentile Queue Length [veh/ln]	3.24	3.47	5.04	5.21	0.60	9.14
95th-Percentile Queue Length [ft/ln]	81.03	86.82	126.11	130.36	15.02	228.60

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	37.92	40.07	6.89	7.08	3.48	6.23
Movement LOS	D	D	A	A	A	A
d_A, Approach Delay [s/veh]	39.01		6.89		6.12	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	7.75					
Intersection LOS	A					
Intersection V/C	0.602					

Emissions

Vehicle Miles Traveled [mph]	16.96	17.52	77.81	38.90	11.10	264.70
Stops [stops/h]	81.03	86.82	252.22	130.36	15.02	722.32
Fuel consumption [US gal/h]	1.85	1.97	5.76	2.93	0.62	18.40
CO [g/h]	129.20	137.53	402.55	204.62	43.48	1285.88
NOx [g/h]	25.14	26.76	78.32	39.81	8.46	250.19
VOC [g/h]	29.94	31.87	93.30	47.42	10.08	298.01

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	825		625		875	
d_b, Bicycle Delay [s]	13.81		18.91		12.66	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.267		3.145	
Bicycle LOS	A		B		C	

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Laredo St/Bufalo Way

Control Type:	Signalized	Delay (sec / veh):	5.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.070

Intersection Setup

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Base Volume Input [veh/h]	17	25	95	29	66	72
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	-31	0	0	-30
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	13	0	15	0	0
Total Hourly Volume [veh/h]	17	12	64	14	66	42
Peak Hour Factor	0.8800	0.8800	0.6700	0.6700	0.8600	0.8600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	3	24	5	19	12
Total Analysis Volume [veh/h]	19	14	96	21	77	49
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	41	0	51	0	48	51
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	0.0	14.0	0.0	9.0	14.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	0	6	0	6	6
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	71	71	71	71	71	71
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	2.9	2.9	51.0	51.0	59.7	59.7
g / C, Green / Cycle	0.04	0.04	0.72	0.72	0.85	0.85
(v / s)_i Volume / Saturation Flow Rate	0.01	0.01	0.05	0.01	0.06	0.03
s, saturation flow rate [veh/h]	1781	1589	1870	1589	1331	1870
c, Capacity [veh/h]	75	67	1347	1145	1254	1580
d1, Uniform Delay [s]	32.82	32.76	2.91	2.80	0.89	0.87
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.75	1.53	0.10	0.03	0.02	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.25	0.21	0.07	0.02	0.06	0.03
d, Delay for Lane Group [s/veh]	34.58	34.30	3.02	2.83	0.91	0.91
Lane Group LOS	C	C	A	A	A	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.34	0.25	0.30	0.06	0.02	0.02
50th-Percentile Queue Length [ft/ln]	8.56	6.34	7.48	1.60	0.48	0.59
95th-Percentile Queue Length [veh/ln]	0.62	0.46	0.54	0.12	0.03	0.04
95th-Percentile Queue Length [ft/ln]	15.41	11.41	13.46	2.89	0.86	1.06

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.58	34.30	3.02	2.83	0.91	0.91
Movement LOS	C	C	A	A	A	A
d_A, Approach Delay [s/veh]	34.46		2.98		0.91	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	5.80					
Intersection LOS	A					
Intersection V/C	0.070					

Emissions

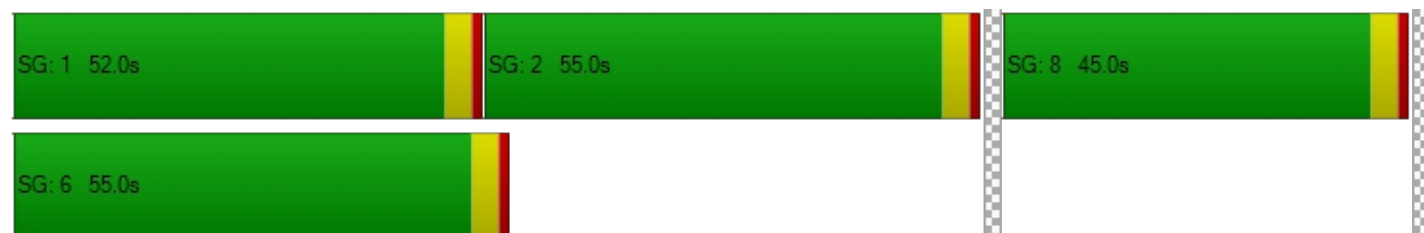
Vehicle Miles Traveled [mph]	0.49	0.36	8.32	1.82	14.35	9.13
Stops [stops/h]	17.45	12.92	15.24	3.27	0.97	1.20
Fuel consumption [US gal/h]	0.25	0.18	0.49	0.11	0.61	0.39
CO [g/h]	17.48	12.85	33.94	7.34	42.68	27.38
NOx [g/h]	3.40	2.50	6.60	1.43	8.30	5.33
VOC [g/h]	4.05	2.98	7.86	1.70	9.89	6.35

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1160		1443		1443	
d_b, Bicycle Delay [s]	6.23		2.74		2.74	
I_b,int, Bicycle LOS Score for Intersection	1.560		1.777		1.768	
Bicycle LOS	A		A		A	

Sequence




Ring 1	1	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Laredo St/North Parking Lot

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Base Volume Input [veh/h]	116	1	6	83	1	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-20	-1	-6	-24	-1	-11
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	96	0	0	59	0	0
Peak Hour Factor	0.6400	0.6400	0.6700	0.6700	0.6000	0.6000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	0	0	22	0	0
Total Analysis Volume [veh/h]	150	0	0	88	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.52	0.00	9.80	9.02
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		9.41	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 4: Laredo St/School Exit

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 0.0
Level Of Service: A
Volume to Capacity (v/c): 0.001

Intersection Setup

Name	South Laredo Street		South Laredo Street		School Exit	
Approach	Northbound		Southbound		Westbound	
Lane Configuration	↑		↑		↶↷	
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		School Exit	
Base Volume Input [veh/h]	83	0	0	85	20	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-25	0	0	-1	-20	-34
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	58	0	0	84	0	0
Peak Hour Factor	0.9000	0.8500	0.8500	0.8500	0.3100	0.3100
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	0	0	25	0	0
Total Analysis Volume [veh/h]	64	0	0	99	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0



Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	9.35	8.60
Movement LOS	A			A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		8.97	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 5: Laredo St/School Entrance

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.001

Intersection Setup

Name	South Laredo Street		South Laredo Street		South Parking Lot	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		South Parking Lot	
Base Volume Input [veh/h]	81	20	24	81	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-1	-20	-24	-21	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	0	0	60	0	1
Peak Hour Factor	0.7900	0.7900	0.6400	0.6400	0.2500	0.2500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	0	0	23	0	1
Total Analysis Volume [veh/h]	101	0	0	94	0	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.41	0.00	0.00	0.00
Movement LOS	A	A	A	A		
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Laredo St/Belleview Dr

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 10.0
Level Of Service: B
Volume to Capacity (v/c): 0.020

Intersection Setup

Name	South Laredo Street		South Laredo Street		East Belleview Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		East Belleview Drive	
Base Volume Input [veh/h]	69	12	22	107	11	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	-21	0	0	-21	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	12	22	86	11	15
Peak Hour Factor	0.8400	0.8400	0.7900	0.7900	0.7200	0.7200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	4	7	27	4	5
Total Analysis Volume [veh/h]	57	14	28	109	15	21
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.02	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	7.39	0.00	10.01	8.78
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.05	0.05	0.13	0.13
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.18	1.18	3.21	3.21
d_A, Approach Delay [s/veh]	0.00		1.51		9.29	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.22					
Intersection LOS	B					

Laredo Middle School TIS

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Scenario 5 2050 Total PM

Report File: C:\...\2050 Total PM.pdf

3/20/2025

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Smoky Hill Rd/Laredo St	Signalized	HCM 7th Edition	NB Left	0.630	9.2	A
2	Laredo St/Buffalo Way	Signalized	HCM 7th Edition	NB Left	0.115	4.7	A
3	Laredo St/North Parking Lot	Two-way stop	HCM 7th Edition	NB Thru	0.002	0.0	A
6	Laredo St/Bellevue Dr	Two-way stop	HCM 7th Edition	WB Left	0.023	10.7	B
7	Laredo St/School Access	Two-way stop	HCM 7th Edition	WB Left	0.143	12.1	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Smoky Hill Rd/Laredo St

Control Type:	Signalized	Delay (sec / veh):	9.2
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.630

Intersection Setup

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↑↑		↵↑↑↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	288.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		East Smoky Hill Road		East Smoky Hill Road	
Base Volume Input [veh/h]	75	141	1069	66	124	2322
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.1200	1.0000	1.0000	1.1200
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	28	28	0	26	26	0
Diverted Trips [veh/h]	-15	-16	0	-15	-15	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	77	0	39	0	0
Total Hourly Volume [veh/h]	88	76	1197	38	135	2601
Peak Hour Factor	0.6600	0.6600	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	29	325	10	37	707
Total Analysis Volume [veh/h]	133	115	1301	41	147	2827
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Active Pattern	Pattern 1
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	33	0	25	0	6	35
Amber [s]	4.0	0.0	4.0	0.0	3.0	4.0
All red [s]	2.0	0.0	2.0	0.0	1.0	2.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	0.0	4.0	0.0	2.0	4.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Pattern 1

Split [s]	39.0	0.0	31.0	0.0	10.0	41.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	C	L	C
C, Calculated Cycle Length [s]	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	4.00	4.00	0.00	4.00
g_i, Effective Green Time [s]	8.7	8.7	50.5	50.5	59.3	59.3
g / C, Green / Cycle	0.11	0.11	0.63	0.63	0.74	0.74
(v / s)_i Volume / Saturation Flow Rate	0.07	0.07	0.25	0.24	0.26	0.55
s, saturation flow rate [veh/h]	1781	1589	3560	1840	565	5094
c, Capacity [veh/h]	195	174	2245	1160	498	3773
d1, Uniform Delay [s]	34.30	34.21	7.30	7.22	4.11	6.04
k, delay calibration	0.11	0.11	0.50	0.50	0.22	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	4.20	4.28	0.53	0.97	0.68	1.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.68	0.66	0.40	0.39	0.30	0.75
d, Delay for Lane Group [s/veh]	38.50	38.49	7.83	8.19	4.78	7.45
Lane Group LOS	D	D	A	A	A	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.66	2.30	3.34	3.45	0.55	6.55
50th-Percentile Queue Length [ft/ln]	66.50	57.61	83.45	86.28	13.79	163.71
95th-Percentile Queue Length [veh/ln]	4.79	4.15	6.01	6.21	0.99	10.75
95th-Percentile Queue Length [ft/ln]	119.69	103.71	150.21	155.30	24.83	268.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	38.50	38.49	7.94	8.19	4.78	7.45
Movement LOS	D	D	A	A	A	A
d_A, Approach Delay [s/veh]	38.50		7.95		7.32	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	9.20					
Intersection LOS	A					
Intersection V/C	0.630					

Emissions

Vehicle Miles Traveled [mph]	24.79	21.44	82.87	41.43	14.06	270.44
Stops [stops/h]	119.69	103.71	300.42	155.30	24.83	884.05
Fuel consumption [US gal/h]	2.72	2.36	6.50	3.31	0.86	20.30
CO [g/h]	190.41	164.70	454.12	231.32	60.05	1419.13
NOx [g/h]	37.05	32.05	88.36	45.01	11.68	276.11
VOC [g/h]	44.13	38.17	105.25	53.61	13.92	328.90

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	825		625		875	
d_b, Bicycle Delay [s]	13.81		18.91		12.66	
I_b,int, Bicycle LOS Score for Intersection	1.560		2.319		3.195	
Bicycle LOS	A		B		C	

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-






Intersection Level Of Service Report
Intersection 2: Laredo St/Bufalo Way

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 4.7
Level Of Service: A
Volume to Capacity (v/c): 0.115

Intersection Setup

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	East Buffalo Way		South Laredo Street		South Laredo Street	
Base Volume Input [veh/h]	17	25	95	29	66	72
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	56	0	0	52
Diverted Trips [veh/h]	0	0	-31	0	0	-30
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	13	0	15	0	0
Total Hourly Volume [veh/h]	17	12	120	14	66	94
Peak Hour Factor	0.8800	0.8800	0.6700	0.6700	0.8600	0.8600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	3	45	5	19	27
Total Analysis Volume [veh/h]	19	14	179	21	77	109
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	Permissive	Permissive	ProtPerm	Permissive
Flashing Yellow Arrow					No	
Signal Group	8	0	2	0	1	6
Auxiliary Signal Groups						
Maximum Green [s]	41	0	51	0	48	51
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Walk [s]	5.0	0.0	5.0	0.0	0.0	5.0
Pedestrian Clearance [s]	10.0	0.0	10.0	0.0	0.0	10.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	0.0	40.0	40.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	9.0	0.0	14.0	0.0	9.0	14.0
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	6	0	6	0	6	6
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Minimum Recall	No		No		No	No
Maximum Recall	No		Yes		No	Yes
Pedestrian Recall	No		No		No	No

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Calculated Cycle Length [s]	71	71	71	71	71	71
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	0.00	2.00
g_i, Effective Green Time [s]	2.9	2.9	51.0	51.0	59.7	59.7
g / C, Green / Cycle	0.04	0.04	0.72	0.72	0.85	0.85
(v / s)_i Volume / Saturation Flow Rate	0.01	0.01	0.10	0.01	0.06	0.06
s, saturation flow rate [veh/h]	1781	1589	1870	1589	1248	1870
c, Capacity [veh/h]	75	67	1347	1145	1167	1580
d1, Uniform Delay [s]	32.82	32.76	3.06	2.80	0.89	0.90
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.75	1.53	0.20	0.03	0.02	0.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.25	0.21	0.13	0.02	0.07	0.07
d, Delay for Lane Group [s/veh]	34.58	34.30	3.26	2.83	0.91	0.99
Lane Group LOS	C	C	A	A	A	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.34	0.25	0.59	0.06	0.02	0.05
50th-Percentile Queue Length [ft/ln]	8.56	6.34	14.67	1.60	0.49	1.36
95th-Percentile Queue Length [veh/ln]	0.62	0.46	1.06	0.12	0.04	0.10
95th-Percentile Queue Length [ft/ln]	15.41	11.41	26.40	2.89	0.88	2.45

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	34.58	34.30	3.26	2.83	0.91	0.99
Movement LOS	C	C	A	A	A	A
d_A, Approach Delay [s/veh]	34.46		3.22		0.96	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	4.67					
Intersection LOS	A					
Intersection V/C	0.115					

Emissions

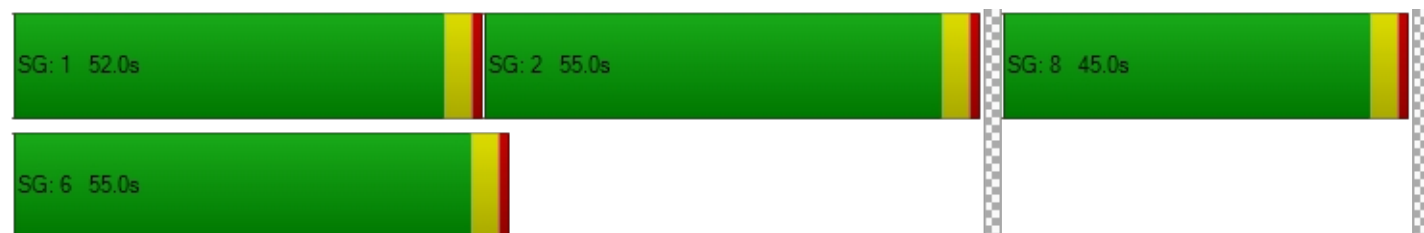
Vehicle Miles Traveled [mph]	0.49	0.36	15.51	1.82	14.35	20.32
Stops [stops/h]	17.45	12.92	29.89	3.27	1.00	2.77
Fuel consumption [US gal/h]	0.25	0.18	0.92	0.11	0.61	0.87
CO [g/h]	17.48	12.85	64.47	7.34	42.69	61.07
NOx [g/h]	3.40	2.50	12.54	1.43	8.31	11.88
VOC [g/h]	4.05	2.98	14.94	1.70	9.89	14.15

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0		0.0		0.0	
M_corner, Corner Circulation Area [ft ² /ped]	0.00		0.00		0.00	
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00		0.00		0.00	
d_p, Pedestrian Delay [s]	0.00		0.00		0.00	
I_p,int, Pedestrian LOS Score for Intersectio	0.000		0.000		0.000	
Crosswalk LOS	F		F		F	
s_b, Saturation Flow Rate of the bicycle lane	2000		2000		2000	
c_b, Capacity of the bicycle lane [bicycles/h]	1160		1443		1443	
d_b, Bicycle Delay [s]	6.23		2.74		2.74	
I_b,int, Bicycle LOS Score for Intersection	1.560		1.914		1.867	
Bicycle LOS	A		A		A	

Sequence




Ring 1	1	2	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Laredo St/North Parking Lot

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.002

Intersection Setup

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		South Laredo Street		North Parking Lot Access	
Base Volume Input [veh/h]	116	1	6	83	1	11
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	56	0	0	52	0	0
Diverted Trips [veh/h]	-20	-1	-6	-24	-1	-11
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	152	0	0	111	0	0
Peak Hour Factor	0.6400	0.6400	0.6700	0.6700	0.6000	0.6000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	0	0	41	0	0
Total Analysis Volume [veh/h]	238	0	0	166	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.71	0.00	10.97	9.49
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		10.23	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 6: Laredo St/Belleview Dr

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 10.7
Level Of Service: B
Volume to Capacity (v/c): 0.023

Intersection Setup

Name	South Laredo Street		Laredo Street		East Belleview Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	South Laredo Street		Laredo Street		East Belleview Drive	
Base Volume Input [veh/h]	69	12	22	107	11	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	34	0	0	38	0	0
Diverted Trips [veh/h]	-21	0	0	-21	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	82	12	22	124	11	15
Peak Hour Factor	0.8400	0.8400	0.7900	0.7900	0.7200	0.6700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	4	7	39	4	6
Total Analysis Volume [veh/h]	98	14	28	157	15	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0


Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.00	0.02	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	7.47	0.00	10.66	9.01
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.05	0.05	0.14	0.14
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.18	1.18	3.60	3.60
d_A, Approach Delay [s/veh]	0.00		1.13		9.68	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.70					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 7: Laredo St/School Access

Control Type:	Two-way stop	Delay (sec / veh):	12.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.143

Intersection Setup

Name	Laredo Street		Laredo Street		New School Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Laredo Street		Laredo Street		New School Access	
Base Volume Input [veh/h]	81	20	24	81	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	34	52	0	38	56
Diverted Trips [veh/h]	-1	-20	-24	-21	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	80	34	52	60	38	56
Peak Hour Factor	0.7900	0.7900	0.6400	0.6400	0.4500	0.4500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	11	20	23	21	31
Total Analysis Volume [veh/h]	101	43	81	94	84	124
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.06	0.00	0.14	0.13
d_M, Delay for Movement [s/veh]	0.00	0.00	7.65	0.00	12.14	9.47
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.18	0.00	0.50	0.46
95th-Percentile Queue Length [ft/ln]	0.00	0.00	4.47	0.00	12.40	11.51
d_A, Approach Delay [s/veh]	0.00		3.54		10.55	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	5.34					
Intersection LOS	B					

Laredo Middle School TIS

Vistro File: C:\...\PM.vistro

Scenario 7 2050 Total PM1

Report File: C:\...\2050 Total PM1.pdf

3/20/2025

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
7	Laredo St/School Access	Signalized	HCM 7th Edition	WB Left	0.137	6.3	A




V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 7: Laredo St/School Access

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 6.3
Level Of Service: A
Volume to Capacity (v/c): 0.137

Intersection Setup

Name	Laredo Street		Laredo Street		New School Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		No		No	

Volumes

Name	Laredo Street		Laredo Street		New School Access	
Base Volume Input [veh/h]	81	20	24	81	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00					
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	34	52	0	38	56
Diverted Trips [veh/h]	-1	-20	-24	-21	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	17	0	0	0	28
Total Hourly Volume [veh/h]	80	17	52	60	38	28
Peak Hour Factor	0.7900	0.7900	0.6400	0.6400	0.4500	0.4500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	5	20	23	21	16
Total Analysis Volume [veh/h]	101	22	81	94	84	62
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Active Pattern	Free Running (No Pattern)
Coordination Type	<i>Free Running</i>
Actuation Type	<i>Fully actuated</i>
Offset [s]	0.0
Offset Reference	Beginning of First Yellow
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing (Basic)

Control Type	Permissive	Permissive	ProtPerm	Permissive	Permissive	Permissive
Flashing Yellow Arrow			No			
Signal Group	2	0	1	6	8	0
Auxiliary Signal Groups						
Maximum Green [s]	55	0	52	55	45	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Walk [s]	5.0	0.0	0.0	5.0	5.0	0.0
Pedestrian Clearance [s]	10.0	0.0	0.0	10.0	10.0	0.0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	0.0	40.0	40.0	40.0	0.0
Advanced Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Advanced Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Phasing & Timing: Free Running (No Pattern)

Split [s]	14.0	0.0	9.0	14.0	9.0	0.0
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	0	5	10	5	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Minimum Recall	Yes		No	Yes	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	L	C	L	R
C, Calculated Cycle Length [s]	22	22	22	22	22
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	0.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5.4	11.4	11.4	3.0	3.0
g / C, Green / Cycle	0.24	0.51	0.51	0.13	0.13
(v / s)_i Volume / Saturation Flow Rate	0.07	0.06	0.05	0.05	0.04
s, saturation flow rate [veh/h]	1813	1442	1870	1781	1589
c, Capacity [veh/h]	440	1150	954	241	215
d1, Uniform Delay [s]	6.94	2.84	2.85	8.86	8.78
k, delay calibration	0.11	0.11	0.11	0.11	0.11
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.34	0.03	0.04	0.86	0.73
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.28	0.07	0.10	0.35	0.29
d, Delay for Lane Group [s/veh]	7.29	2.86	2.89	9.72	9.51
Lane Group LOS	A	A	A	A	A
Critical Lane Group	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.29	0.02	0.03	0.28	0.21
50th-Percentile Queue Length [ft/ln]	7.15	0.58	0.74	6.99	5.15
95th-Percentile Queue Length [veh/ln]	0.51	0.04	0.05	0.50	0.37
95th-Percentile Queue Length [ft/ln]	12.87	1.05	1.33	12.58	9.27

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	7.29	7.29	2.86	2.89	9.72	9.51
Movement LOS	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	7.29		2.88		9.63	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.32					
Intersection LOS	A					
Intersection V/C	0.137					

Emissions

Vehicle Miles Traveled [mph]	4.87	8.17	9.48	5.87	4.33
Stops [stops/h]	45.81	3.74	4.72	44.79	33.01
Fuel consumption [US gal/h]	0.64	0.40	0.47	0.66	0.48
CO [g/h]	44.46	28.25	32.98	45.79	33.60
NOx [g/h]	8.65	5.50	6.42	8.91	6.54
VOC [g/h]	10.30	6.55	7.64	10.61	7.79

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft ² /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00
I_p,int, Pedestrian LOS Score for Intersectio	0.000	0.000	0.000
Crosswalk LOS	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	4896	4896	4006
d_b, Bicycle Delay [s]	23.55	23.55	11.30
I_b,int, Bicycle LOS Score for Intersection	1.791	1.848	1.560
Bicycle LOS	A	A	A

Sequence

Ring 1	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

