

Traffic Impact Analysis

Puyallup Mixed-Use
Puyallup, Washington

Prepared For:

Urban Olympia

Prepared By:

GVC Transportation Solutions

February 2026

GVC Transportation Solutions

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Traffic Impact Analysis

Project Information

Project: Puyallup Apartments

Prepared for: Urban Olympia

Reviewing Agency

Jurisdiction: City of Puyallup

Project Representative

Prepared by: GVC Transportation Solutions

Contact: Ryan Shea, PTP, Senior Transportation Planner

Project Reference: GVC #0544.000

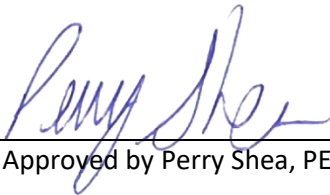
Path: GVC Management Company, Inc\GVC
Transportation Solutions (Non Gondola Projects
Only)\0544 - Urban Olympia\Puyallup Housing
Scoping\03 - Dels\TIA\2026 0225 Puyallup Apartments
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SIGNATURE

The technical material and data contained in the Traffic Impact Analysis were prepared under the supervision and direction of the undersigned, whose seal, as a professional engineer licensed to practice as such, is affixed below.



Prepared by Ryan Shea, PTP Senior Project Manager



Approved by Perry Shea, PE, Senior Principal

Table of Contents

1	Introduction	1
1.1	Project Overview	1
1.2	Study Context	1
2	Project Description.....	2
2.1	Development Proposal	2
3	Existing Conditions	5
3.1	Area Land Uses	5
3.2	Roadway Inventory.....	5
3.3	Traffic Volumes.....	5
3.4	Crash History	8
3.5	Transit and Non-Motorized Facilities	8
4	Project Traffic Characteristics	9
4.1	Site-Generated Traffic Volumes	9
4.2	Site Traffic Distribution and Assignment.....	10
5	Future Traffic Conditions	12
5.1	Roadway Network Improvements.....	12
5.2	Future Traffic Volumes	12
6	Traffic Operations Analysis.....	15
6.1	Level of Service	15
6.2	Volume to Capacity Ratio	15
6.3	Intersection Analysis	16
6.4	Existing Vehicle Queuing	17
6.5	Intersection Analysis Sensitivity	18
6.6	Intersection Analysis Summary	19
7	Summary and Conclusions.....	20

List of Tables

Table 1. Existing Crash Severity.....	8
Table 2. PM Peak Hour Trip Generation Rates	10
Table 3. PM Peak Hour Trip Generation	10
Table 4. Level of Service Criteria for Intersections	15
Table 5. PM Peak Hour Intersection Operating Conditions	17
Table 6. PM Peak Hour Observed Queues - Eastbound Approach	18
Table 7. PM Peak Hour Intersection Operating Conditions – With Calibration.....	19

List of Figures

Figure 1. Site Vicinity Map	1
Figure 2a. Preliminary Site Plan – Puyallup Bell Place	3
Figure 2b. Preliminary Site Plan – Puyallup AOB	4
Figure 3. Intersection Channelization and Control	6
Figure 4. Existing 2025 PM Peak Hour Traffic Volumes	7
Figure 5. PM Peak Hour Site-Generated Traffic Volumes.....	11
Figure 6. Projected 2030 PM Peak Hour Traffic Volumes without Project.....	13
Figure 7. Projected 2030 PM Peak Hour Traffic Volumes with Project	14

List of Appendices

Appendix A	Traffic Volume Counts
Appendix B	Traffic Volume Calculation Worksheets
Appendix C	Operations Analysis Worksheets

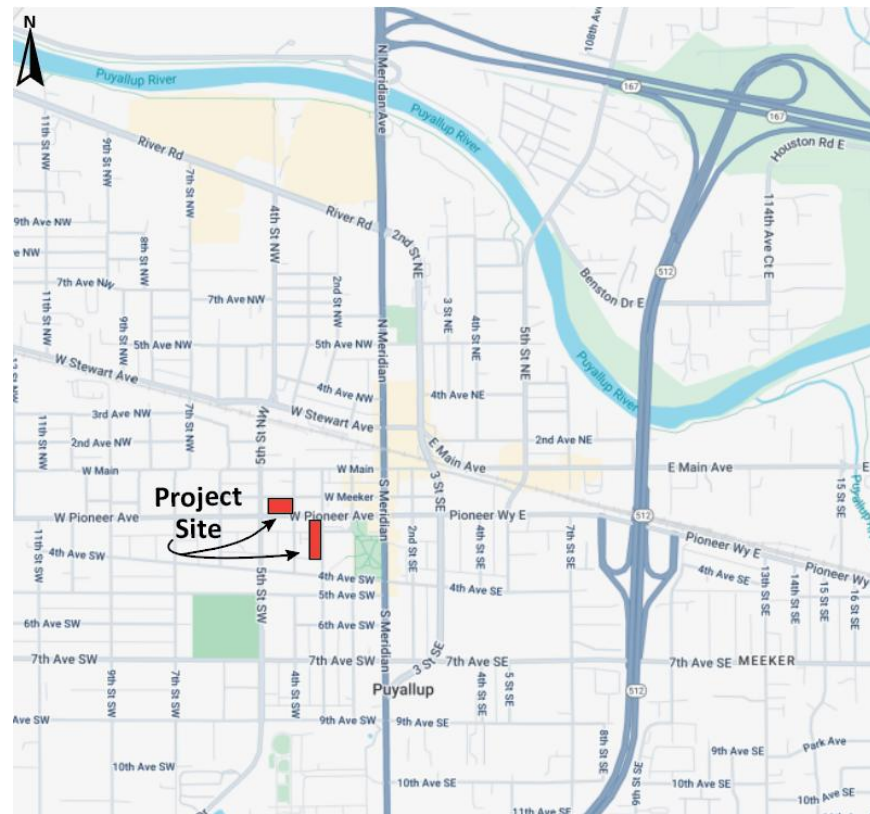
1 INTRODUCTION

1.1 PROJECT OVERVIEW

The Puyallup Mixed-Use project is being proposed for construction which includes a multifamily and mixed-use structure on two project sites. The proposed project sites are both located along W Pioneer Avenue in Puyallup, Washington. Given the close proximity and similar construction timing of the two projects they have been combined in this report to better assess the overall traffic impacts.

Figure 1 illustrates the site vicinity and the transportation network serving the project area.

FIGURE 1. SITE VICINITY MAP



1.2 STUDY CONTEXT

This report has been prepared to provide traffic analysis and project information to assist the City of Puyallup in reviewing the development proposal. This report describes the existing and forecasted operation of the following study area intersections:

- 3rd Street SW at W Pioneer Avenue
- S Meridian at W Pioneer Avenue/Pioneer Way E
- 3rd Street SE at Pioneer Way E

Operational analysis has been prepared for existing 2025 PM peak hour conditions and forecasted 2030 PM peak hour conditions with and without completion of the development.

2 PROJECT DESCRIPTION

2.1 DEVELOPMENT PROPOSAL

The proposed Puyallup Mixed-Use project will construct two new structures, the Puyallup Bell Place which will provide apartment units and the Puyallup AOB which will provide a mix of apartment units and commercial space. The proposed Puyallup Bell Place structure will provide 100 dwelling units and will be located at 204 4th Street SW. The proposed Puyallup AOB structure will provide 140 dwelling units and 2,300 square feet of ground floor commercial space and will be located at 330 3rd Street SW.

The Puyallup Bell Place project site currently provides a single-family residence; this home will be removed as a result of the proposed project. The Puyallup AOB project site is currently being used as a parking lot for City staff, this parking lot will be removed as a result of the proposed project.

Site access is expected to be provided by the existing access at each site.

The project is anticipated to open in 2027. The preliminary site plans are provided on **Figure 2**.

FIGURE 2A. PRELIMINARY SITE PLAN – PUYALLUP BELL PLACE

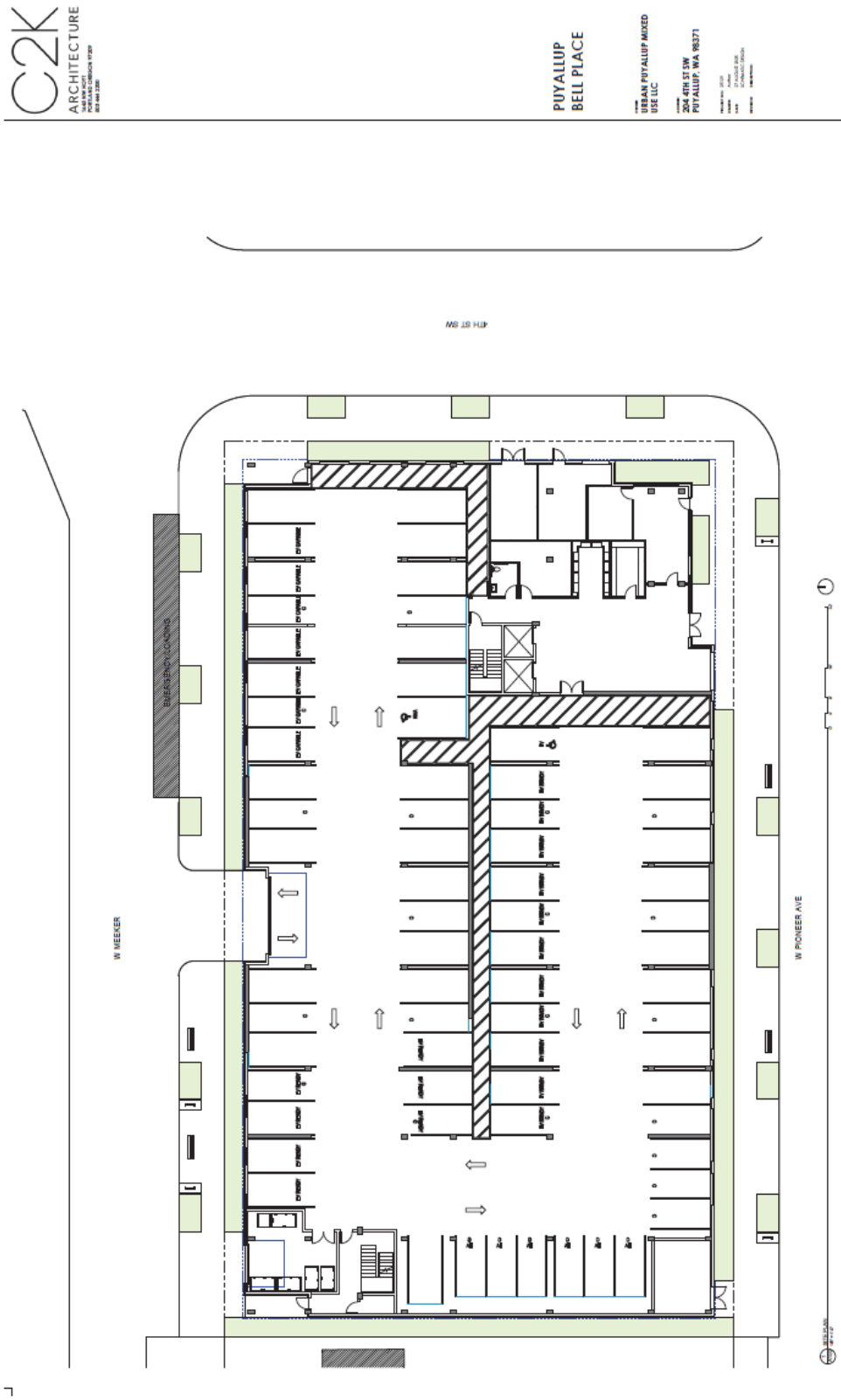
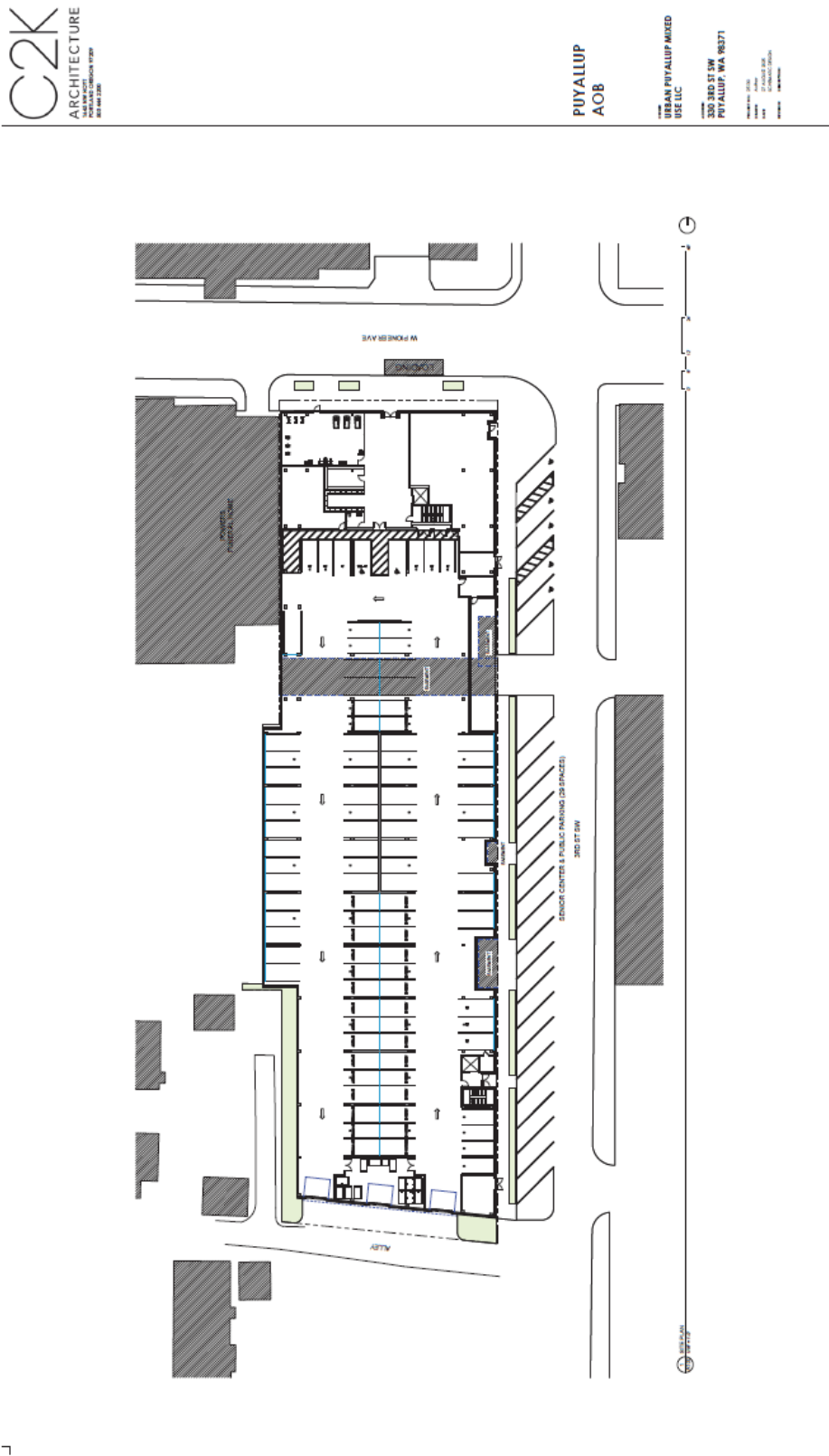


FIGURE 2B. PRELIMINARY SITE PLAN – PUYALLUP AOB



3 EXISTING CONDITIONS

3.1 AREA LAND USES

The proposed project will be located on property along W Pioneer Avenue in Puyallup, Washington. The adjacent land uses include a mix of residential, institutional, recreational and commercial. The Puyallup Sounder Station is located nearby, north of the project sites.

3.2 ROADWAY INVENTORY

3.2.1 W PIONEER AVENUE/PIONEER WAY E

W Pioneer Avenue/Pioneer Way E is an east-west major arterial. Within the project vicinity this roadway provides one travel lane in each direction and has a posted speed limit of 25 mph. Pioneer Way E provides connections to and from SR 512.

3.2.1 3RD STREET SW

3rd Street SW, within the project vicinity is a north-south local road that provides one lane in each direction and has a speed limit of 25 mph.

3.2.1 S MERIDIAN

S Meridian, within the project vicinity is a one-way southbound major arterial that provides two southbound lanes. This roadway has a posted speed limit of 25mph.

3.2.1 3RD STREET SE

3rd Street SE, within the project vicinity is a one-way northbound major arterial that provides two northbound lanes. This roadway has a posted speed limit of 30 mph.

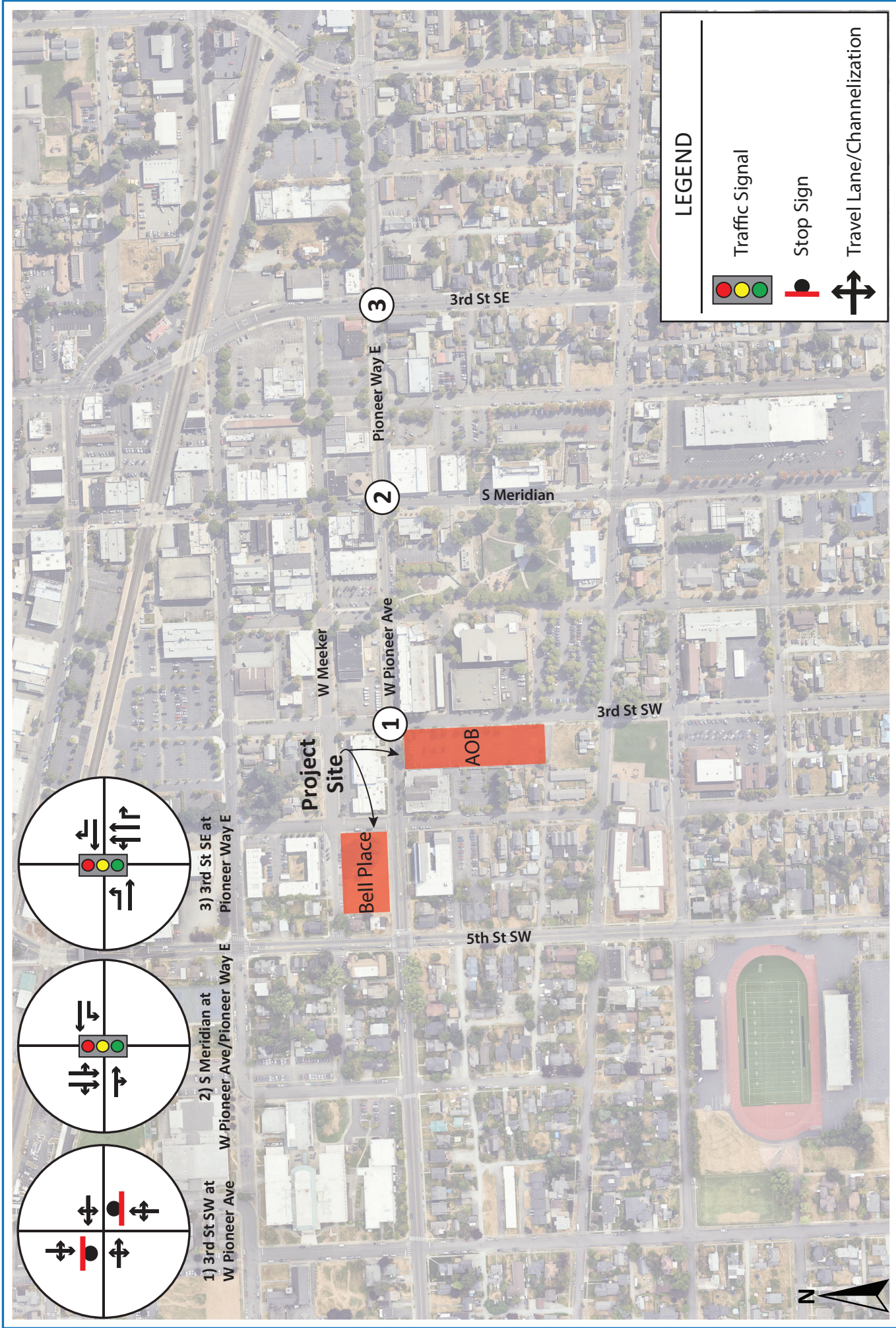
A summary of the existing intersection channelization and control type for each of the study intersections is provided in **Figure 3**.

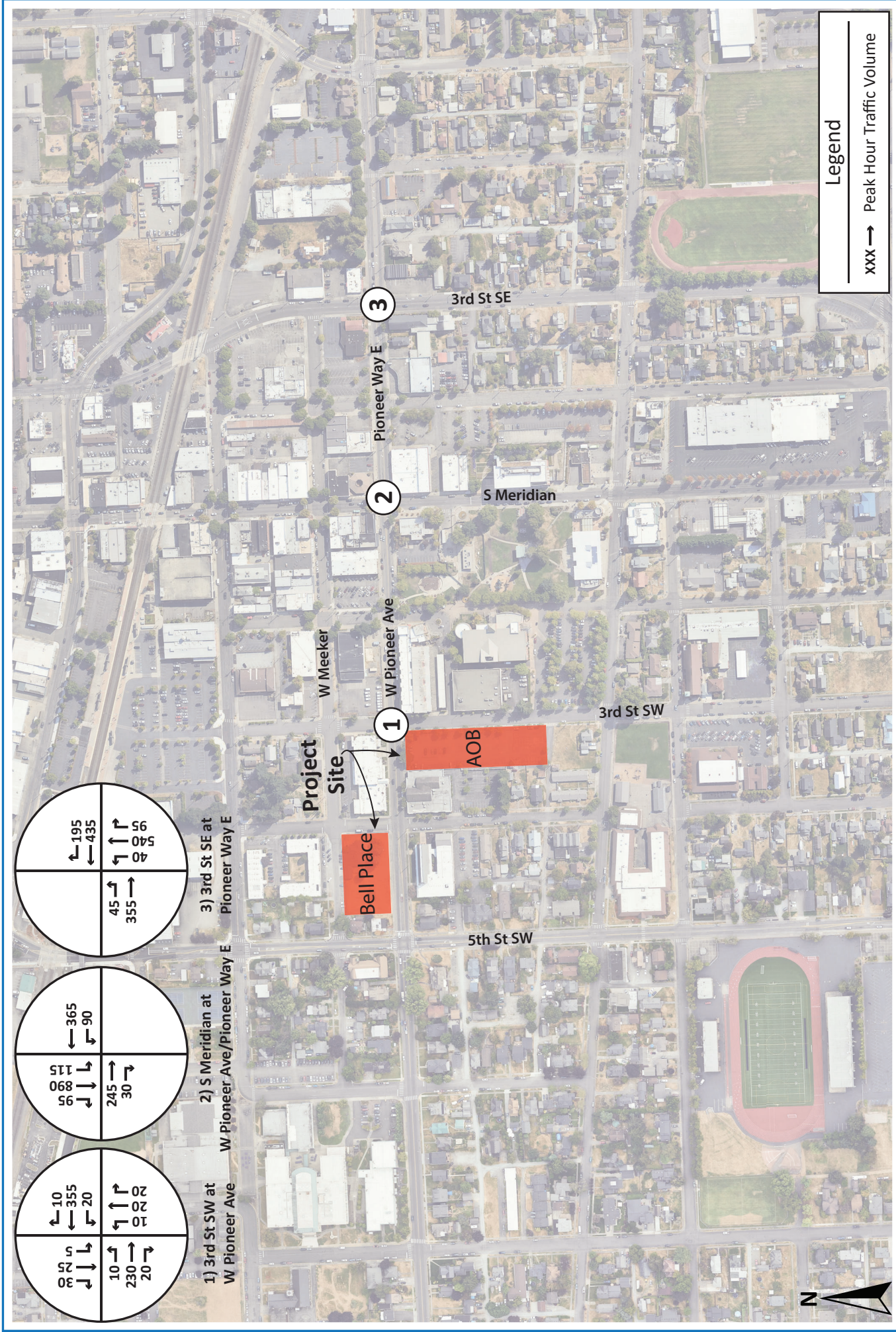
3.3 TRAFFIC VOLUMES

Traffic Count Consultants, TC2, a transportation data collection service, provided evening peak period turning movement counts for the following locations.

- 3rd Street at SW Pioneer Avenue
- S Meridian at W Pioneer Avenue/Pioneer Way E
- 3rd Street SE at Pioneer Way E

The counts were conducted on November 18, 2025, between 4:00 pm and 6:00 pm for the evening peak period. **Figure 4** shows the existing 2025 PM peak hour traffic volumes for the study intersections. The turning movement count diagrams are provided in **Appendix A**.





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Puyallup, Washington
Traffic Impact Analysis

Figure 4
Existing 2025 PM Peak Hour
Traffic Volumes

3.4 CRASH HISTORY

The Washington State Department of Transportation provides crash data for study area roadways. The data was collected over the five-year span between January 1, 2020 and December 31, 2024. The crash data has been summarized by severity and location in **Table 1**.

TABLE 1. EXISTING CRASH SEVERITY

Intersection	Fatal	Serious Injury	Minor Injury	Possible Injury	Property Damage Only	Total
3 rd Street SW at W Pioneer Avenue	0	0	0	2	5	7
S Meridian at W Pioneer Avenue/Pioneer Way E	0	0	2	1	13	16
3 rd Street SE at Pioneer Way E	0	0	3	1	25	29
Total	0	0	5	4	43	52

Within the study, there were no crashes reported that resulted in a fatality or serious injury. Overall, approximately 80 percent of all the reported crashes were classified as property damage only (with no apparent injury). The proposed project is similar in character to the surrounding land use types and densities and should not materially change the crash trends within the study area.

3.5 TRANSIT AND NON-MOTORIZED FACILITIES

Pierce Transit currently serves the City of Puyallup with transit services. The project sites are currently served with transit service by routes 400 and 409. Transit stops are currently provided along W Pioneer Avenue and 5th Street SW located less than 0.15 miles of the project sites.

Sound Transit currently provides the project area with rail service. The Puyallup Sounder Station is located approximately 0.15 miles north of the project sites.

Sidewalks are provided along all study area roadways. There are currently no dedicated bike lanes provided within the study area.

4 PROJECT TRAFFIC CHARACTERISTICS

The project-related characteristics having the most effect on area traffic conditions are peak hour trip generation and the directional distribution of traffic volumes on the surrounding roadway network. The PM peak hour was selected as the traffic analysis period as it represents the highest potential traffic condition on area roadways.

4.1 SITE-GENERATED TRAFFIC VOLUMES

Vehicle trip generation was calculated for the proposed and existing land uses, using the trip generation rates contained in the 12th edition of the Trip Generation Manual by the *Institute of Transportation Engineers (ITE)*. For the proposed residential uses, the land use category Multifamily Housing (Mid Rise) Close to Rail Transit (land use code 221) was used. To provide a conservative analysis for the proposed commercial space, the land use category Coffee/Donut Shop without Drive-Through Window (land use code 936) was used.

Internal Capture

Internal capture calculations were prepared to reflect the on-site interaction between the proposed uses (coffee shop and residential). Using the 3rd edition methodology of the ITE Trip Generation Handbook, an internal capture calculation between the proposed uses was calculated. This resulted in an estimated 11% capture rate for the PM peak hour.

Pass-By

It is anticipated that this project will attract some traffic from people already driving on the area roadways. These trips are not new trips added to the local roadways (primary trips) but represent “pass-by” trips according to the following definition:

Pass-by trips: Pass-by trips are trips made as an intermediate stop from an origin to a primary destination (i.e., stopping to shop on the way home from work) by vehicles passing directly by the project driveway.

The 12th edition of the *Trip Generation Manual* by ITE provides data on pass-by characteristics for certain land use categories. A pass-by rate is not provided for the land use category Coffee/Donut Shop without Drive-Through Window (LUC 936), therefore, through coordination with City staff, the pass-by rate for Fast-Food Restaurant with Drive-Through Window (LUC 934) was used. The PM peak hour pass-by percentage for Fast-Food Restaurant with Drive-Through Window is 55%. Pass-by trips are expected to occur on W Pioneer Ave and will utilize existing on-street parking.

For the existing land use (single family home) the land use category Single-Family Detached Housing (land use code 210) was used. The trip generation rates and calculations for the existing land use are included in **Appendix B**.

The PM peak hour trip generation rates used for the proposed project are shown in **Table 2**.

TABLE 2. PM PEAK HOUR TRIP GENERATION RATES

Land Use Category (Land Use Code)	Unit	Trip Rate	Internal Capture %	Pass-by %	% Enter	% Exit
Multifamily Housing (Mid Rise) Close to Rail Transit (221)	Dwelling Units	0.25	17%	-	74%	26%
Coffee/Donut Shop without Drive-Through Window (936)	1,000-sqft	31.53	8%	55%	50%	50%

The total trip generation expected from this project was calculated by applying the unit measure for each land use category to the appropriate trip generation rate. The PM peak hour trip generation calculations are shown in **Table 3**. Data presented in the tables includes both the proposed use and the existing single family home use. Trips from the existing use were subtracted from the new use to estimate total net new trips expected to travel to and from the project site.

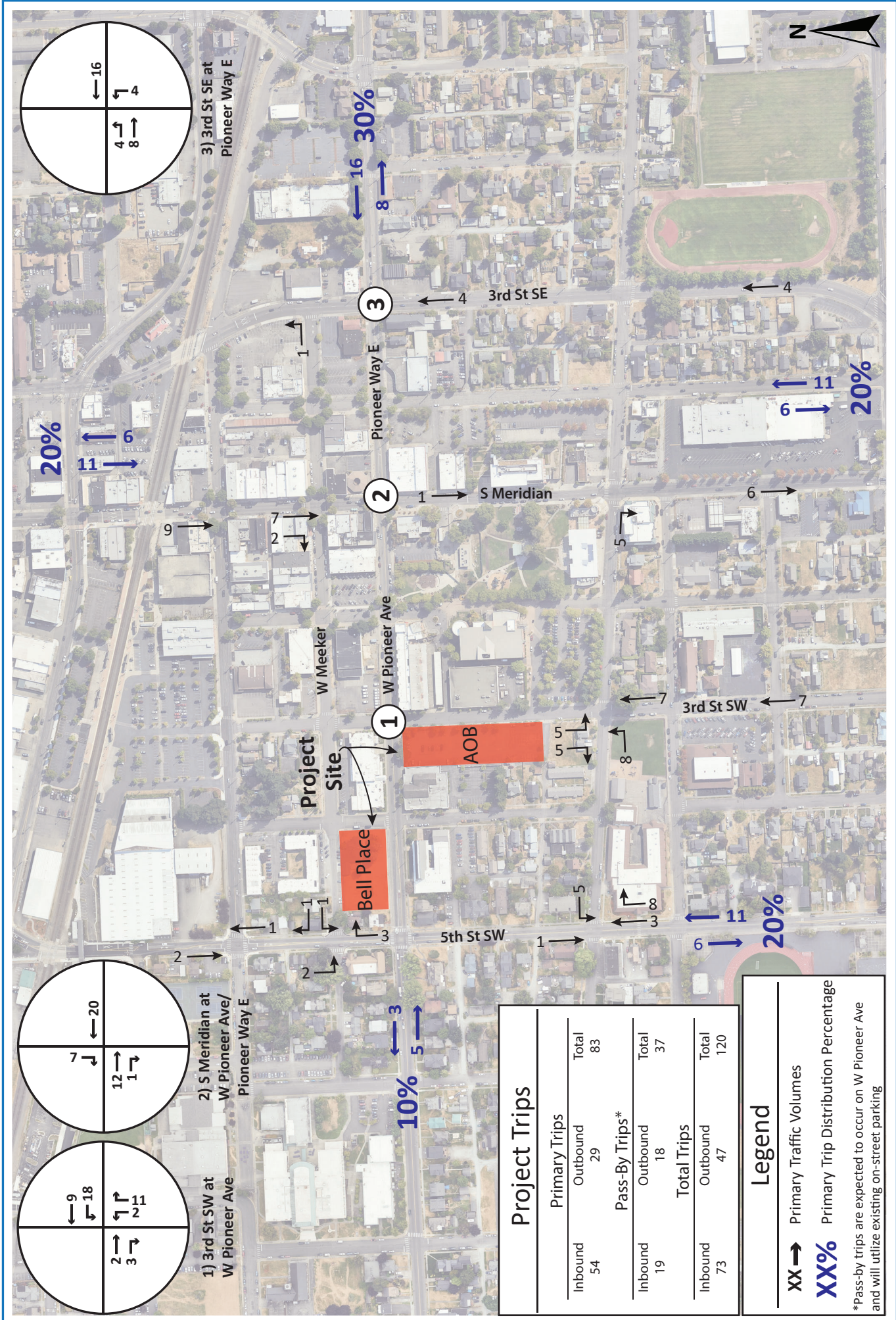
TABLE 3. PM PEAK HOUR TRIP GENERATION

Land Use	Size	Total Trips	Internal Capture	Pass-by	New-to-Network Trips		
					Enter	Exit	Total
Multifamily (AOB)	140	35.0	6.0	0.0	21.5	7.5	29.0
Coffee Shop	2.3	72.5	6.0	36.6	15.0	14.9	29.9
Multifamily (Bell Place)	100	25.0	0.0	0.0	18.5	6.5	25.0
Proposed Use Total	-	132.5	12.0	36.6	55.0	28.9	83.9
<i>Existing Single Family Home</i>	<i>1</i>	<i>0.9</i>	<i>0.0</i>	<i>0.0</i>	<i>0.6</i>	<i>0.3</i>	<i>0.9</i>
Net Increase Project Trips	-	131.6	12.0	36.6	54.4	28.6	83.0

The complete project trip generation calculations are included in Appendix B.

4.2 SITE TRAFFIC DISTRIBUTION AND ASSIGNMENT

We have prepared a trip distribution and assignment for the proposed development. The directional distribution of traffic to and from the proposed project was estimated based on locations and densities of existing land uses and proximity to SR 512. The traffic distribution percentages and traffic assignments are shown on **Figure 5** for the PM peak hour.



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Puyallup, Washington
Traffic Impact Analysis

Figure 5
PM Peak Hour Site Generated
Traffic Volumes

5 FUTURE TRAFFIC CONDITIONS

5.1 ROADWAY NETWORK IMPROVEMENTS

The City of Puyallup 2025-2030 6-year TIP was reviewed, and the following projects were identified in the project area:

- Project # 26: 5th St SW & W Pioneer Signal Replacement and Intersection Improvements - Replacing signal system and increasing radii of corners, bringing the intersection up to current ADA standards. This project has been completed.
- Project # 44 Meeker Street Improvements (Design and Construction)- Develop and implement a design for a festival street for E. Meeker between Meridian and 3rd Street SE to connect downtown to the Meeker Mansion and support recurring temporary closures to vehicular traffic for the purpose of pedestrian-oriented special activities. This project is currently in design phase; construction is expected to start in 2027.
- Project # 16: S Meridian and Pioneer Ave- Eastbound right turn pocket. Achieve intersection LOS and reduce congestion. This project currently has no timeline for design/construction.

5.2 FUTURE TRAFFIC VOLUMES

Traffic volume forecasts were prepared for PM peak hour conditions for the 2030 horizon year. The future traffic volume forecast includes non-specific background traffic growth and estimated traffic generated by the proposed project.

For the non-specific background traffic growth, a 1.5 percent annual growth rate was used which is consistent with the City of Puyallup 2044 Comprehensive Plan.

The projected 2030 traffic volumes without the project are shown on **Figure 6**. The projected 2030 traffic volumes with project are shown on **Figure 7**.

The traffic volume calculations for the study intersections are included in **Appendix B**.

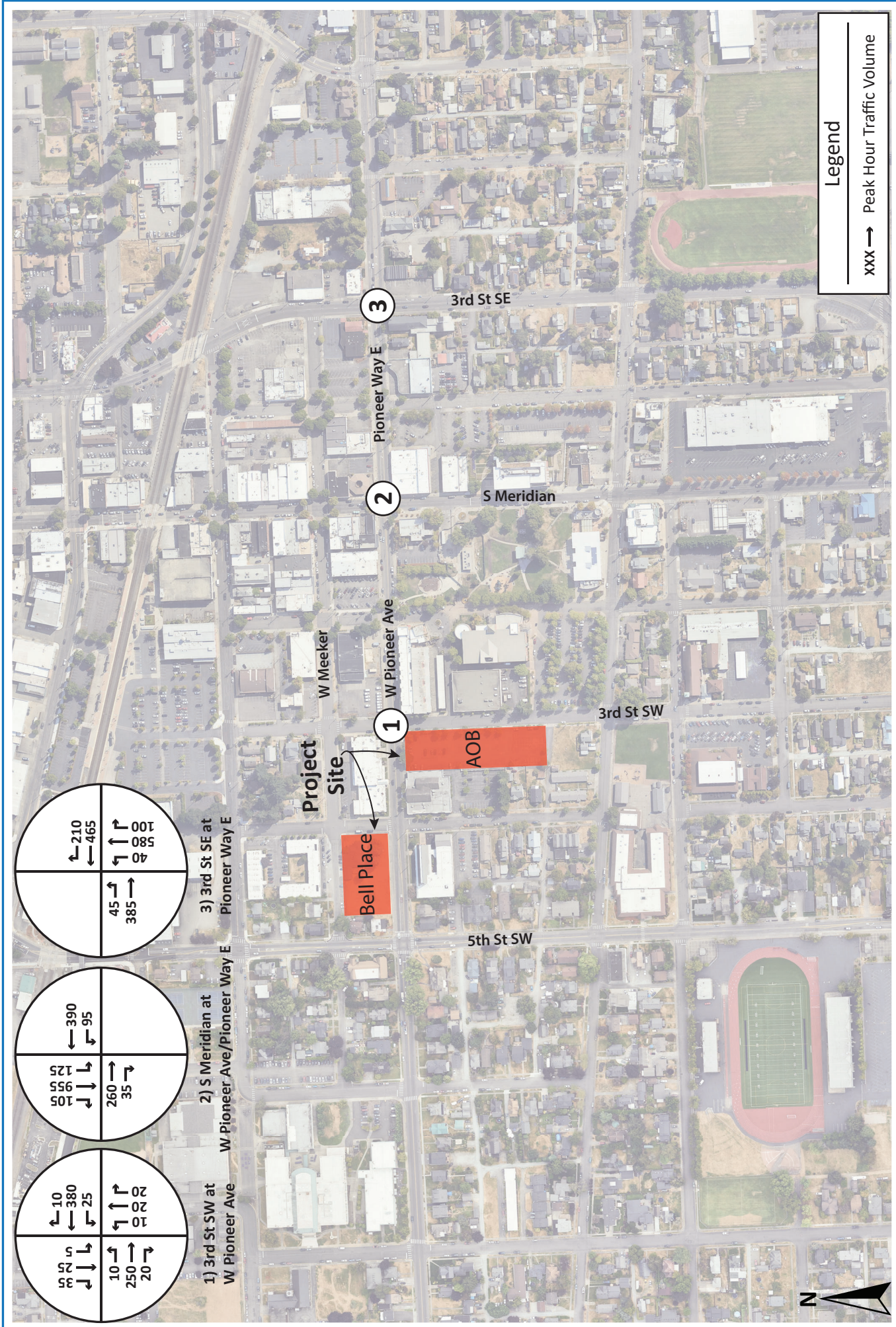


Figure 6
 Projected 2030 PM Peak Hour
 Traffic Volumes without Project

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 Puyallup, Washington
 Traffic Impact Analysis

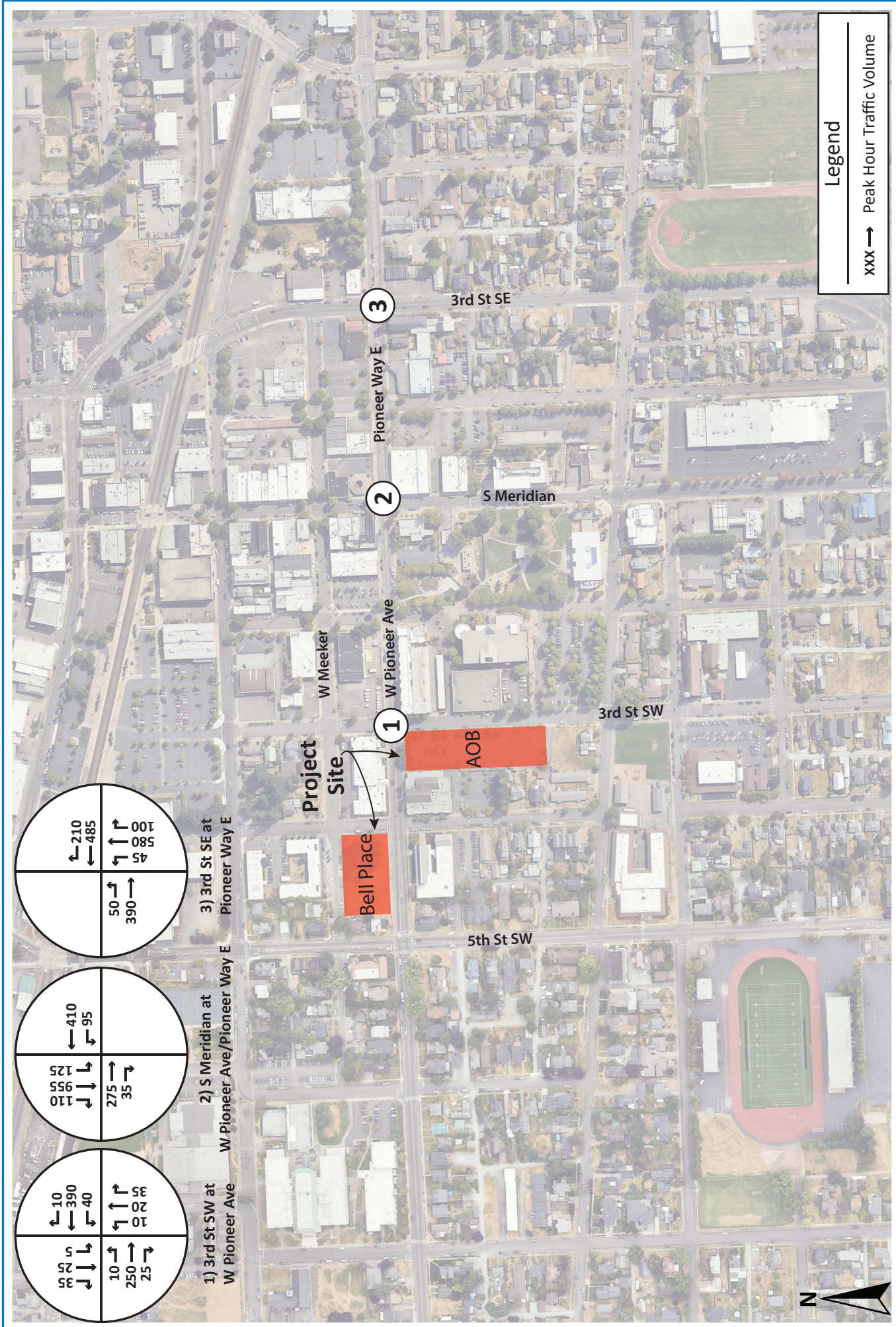


Figure 7
 Projected 2030 PM Peak Hour
 Traffic Volumes with Project

6 TRAFFIC OPERATIONS ANALYSIS

Traffic analyses were conducted to identify any deficiencies within the study area for the PM peak hour in the 2025 base year and the 2030 horizon year. The PM peak hour was selected as the traffic analysis period as it represents the highest potential traffic condition on area roadways.

6.1 LEVEL OF SERVICE

The acknowledged source for determining operational performance for arterial segments and independent intersections is the current edition of the *Highway Capacity Manual* (HCM). Intersection analysis was performed using the Synchro software package (version 12). This software implements the methods of the 7th edition HCM.

Operations analysis results are described in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion).

The City of Puyallup Transportation Plan identifies a LOS standard E for intersections on Meridian, Shaw Road and 9th Street SW and LOS D for all other intersections.

6.1.1 INTERSECTION OPERATIONS

For signalized, all-way stop, and roundabout controlled intersections, the overall LOS grade represents the weighted average of all movements at the intersection. For intersections under minor street stop-sign control, the LOS of the most difficult movement (typically the minor street left turn) represents the intersection level of service. The LOS/delay criteria for stop sign-controlled intersections are different than for signalized intersections because driver expectation is that a signalized intersection is designed to carry higher traffic volumes and experience greater delay.

Table 4 shows the Level of Service criteria for stop-controlled intersections and signalized intersections.

TABLE 4. LEVEL OF SERVICE CRITERIA FOR INTERSECTIONS

Level of Service	Signalized/Roundabout Intersection Average Control Delay (seconds/vehicle)	Stop-Controlled Intersection Average Control Delay (seconds/vehicle)
A	≤ 10	≤ 10
B	> 10-20	> 10-15
C	> 20-35	> 15-25
D	> 35-55	> 25-35
E	> 55-80	> 35-50
F	> 80	> 50

6.2 VOLUME TO CAPACITY RATIO

Another measure of the performance of an intersection is the “degree of saturation” which is typically presented as the “volume to capacity” (v/c) ratio. Many factors affect the volume of traffic that an intersection can accommodate during a specific time interval. These factors include the number of lanes, lane widths, the type of signal phasing, the number of parking maneuvers on the adjacent street, etc. Based on these factors, the intersection (or individual lane group) is determined to have a total

theoretical vehicle carrying capacity “c” for the analysis period. The analysis period volume “v” is compared to the calculated carrying capacity and presented as a ratio. If the v/c ratio is below 1.0, the demand volume is less than the maximum capacity. If the v/c ratio is over 1.0, the demand volume exceeds the available capacity.

6.3 INTERSECTION ANALYSIS

The analysis was conducted for the following scenarios:

- Existing 2025 traffic volumes
- Projected 2030 traffic volumes without the Project
- Projected 2030 traffic volumes with the Project

Given the proximity of the study area to the BNSF railroad, the intersection operations are difficult to model accurately. Traditional analysis likely under estimates the delay experienced, especially during peak hour conditions when traffic volumes are highest. To provide a more complete analysis, two approaches have been taken to model the study intersections. The first analysis follows the standard approach, using the existing traffic signal timings provided by the city and modelling the counted traffic volumes. These results are summarized below. A second analysis methodology was used to calibrate to the specific conditions of the study area and the influence of the frequent rail events. This relied on adjusting the peak hour factor to replicate observed vehicle queues and is described in more detail in sections 6.4 – 6.6.

The intersection control and channelization are documented earlier in this report in Figure 3. The LOS analysis worksheets are included in **Appendix C**. The following is a description of the Level of Service analysis results using the standard approach for the study intersections.

6.3.1 3RD STREET SW/ W PIONEER AVENUE

This is a four-legged intersection under stop-sign control for the northbound and southbound approaches. In the PM peak hour, the intersection currently operates at LOS C. In the projected 2030 horizon, this intersection is expected to remain at LOS C with and without project traffic.

6.3.2 S MERIDIAN AT W PIONEER AVENUE/PIONEER WAY E

This is a four-legged intersection under traffic signal control. In the PM peak hour, the intersection currently operates at LOS B. In the projected 2030 horizon, this intersection is expected to operate at LOS B with and without project traffic.

6.3.3 3RD STREET SE AT PIONEER WAY E

This is a four-legged intersection under traffic signal control. In the PM peak hour, the intersection currently operates at LOS B. In the projected 2030 horizon, this intersection is expected to remain at LOS B with and without project traffic.

The intersection operational results for the PM peak hour are presented in **Table 5**.

TABLE 5. PM PEAK HOUR INTERSECTION OPERATING CONDITIONS

Intersection	Control	Mobility Standard	Base Year 2025		Projected 2030 without Project		Projected 2030 with Project	
			LOS (Delay)	Worst V/C Ratio	LOS (Delay)	Worst V/C Ratio	LOS (Delay)	Worst V/C Ratio
3 rd Street SW at W Pioneer Avenue	TWSC ¹	LOS D	C (15.7)	0.17	C (16.9)	0.19	C (17.2)	0.20
S Meridian at W Pioneer Avenue/Pioneer Way E	Signal	LOS E	B (11.7)	0.79	B (12.6)	0.82	B (13.0)	0.82
3 rd Street SE at Pioneer Way E	Signal	LOS D	B (11.3)	0.78	B (11.6)	0.80	B (11.9)	0.81

1. Two-Way Stop-Control

As described above, these results are likely underrepresenting the level of delay experienced in the study area. The following sections describe a calibrated analysis of the S Meridian at W Pioneer Avenue/Pioneer Way E intersection.

6.4 EXISTING VEHICLE QUEUING

Due to the close proximity to the train tracks, this area experiences long queues when a train event occurs, especially along S Meridian and Pioneer. To understand the impacts of a train event, Traffic Count Consultants, TC2, observed the evening peak period queues and provided queue data for the intersection of S Meridian at W Pioneer Avenue/Pioneer Way E. The queues were observed between 4:00 and 6:00 pm on November 18, 2025. The observed queues for eastbound approach are shown in **Table 6**.

TABLE 6. PM PEAK HOUR OBSERVED QUEUES - EASTBOUND APPROACH

Time Ending (PM)	Observed End of Queue
4:05	Midblock btwn 2nd St & 3rd St SW
4:10	Midblock btwn 3rd St & 4th St SW
4:15	Midblock btwn 3rd St & 4th St SW
4:20	Midblock btwn 2nd St & 3rd St SW
4:25	To 4th St SW
4:30	To 5th St SW
4:35	To 4th St SW
4:40	To 2nd St SW
4:45	To 2nd St SW
4:50	To 4th St SW
4:55	To 4th St SW
5:00	Midblock btwn 3rd St & 4th St SW
5:05	To 3rd St SW
5:10	Midblock btwn 2nd St & 3rd St SW
5:15	Midblock btwn 2nd St & 3rd St SW
5:20	To 2nd St SW
5:25	To 3rd St SW
5:30	To 3rd St SW
5:35	To 3rd St SW
5:40	Midblock btwn 3rd St & 4th St SW
5:45	To 2nd St SW
5:50	Midblock btwn 2nd St & 3rd St SW
5:55	To 2nd St SW
6:00	To 2nd St SW

As shown in the table, the vehicle queues were typically observed to reach as far as 3rd Street SW. Over the two hours of observations there were three time periods when the vehicle queue extended beyond 3rd Street, and these are assumed to correspond with train events that creating additional delay on S Meridian Road. In each instance these queues shortened back down to 3rd Street within 15 minutes or less, indicating that the overall roadway system has some level of additional capacity to recover from each train event.

6.5 INTERSECTION ANALYSIS SENSITIVITY

The Synchro intersection analysis results, using the existing traffic volumes and peak hour factors, does not accurately report the impacts associated with the observed queues along W Pioneer Ave. The intersection analysis for S Meridian at W Pioneer Avenue/Pioneer Way E has been calibrated using a lower peak hour factor to reflect the observed queues. This methodology has been used in prior studies within the study area. The calibrated intersection operational results for the intersection of S Meridian at W Pioneer Avenue/Pioneer Way E during the PM peak hour are presented in **Table 7**.

TABLE 7. PM PEAK HOUR INTERSECTION OPERATING CONDITIONS – WITH CALIBRATION

Intersection	Control	Mobility Standard	Base Year 2025		Projected 2030 without Project		Projected 2030 with Project	
			LOS (Delay)	Worst V/C Ratio	LOS (Delay)	Worst V/C Ratio	LOS (Delay)	Worst V/C Ratio
S Meridian at W Pioneer Avenue/Pioneer Way E	Signal	LOS E	D (35.1)	0.94	D (51.0)	1.06	E (58.1)	1.12

With the calibrated analysis model the intersection is projected to operate at LOS D today and in the 2030 baseline, dropping to LOS E after completion of the proposed project. This is still within the identified level of service standard for the intersection.

6.6 INTERSECTION ANALYSIS SUMMARY

Given the unique impacts caused by the adjacent railroad, it is challenging to accurately model the study area intersections. The two analysis methodologies used in this analysis should provide a range for the performance of the main intersection of Pioneer Ave/Meridian Rd. Both analysis methodologies result in the intersection operating within its LOS standard.

7 SUMMARY AND CONCLUSIONS

The proposed Puyallup Mixed-Use project will construct two new structures, the Puyallup Bell Place which will provide apartment units and the Puyallup AOB which will provide a mix of apartment units and commercial space. The proposed Puyallup Bell Place structure will provide 100 dwelling units and will be located at 204 4th Street SW. The proposed Puyallup AOB structure will provide 140 dwelling units and 2,300 square feet of ground floor commercial space and will be located at 330 3rd Street SW.

The Puyallup Bell Place project site currently provides a single-family residence; this home will be removed as a result of the proposed project. The Puyallup AOB project site is currently being used as a parking lot for City staff, this parking lot will be removed as a result of the proposed project. Site access is expected to be provided by the existing access at each site.

At full occupancy and operation, the project is estimated to generate approximately 83 new-to-network trip ends during the PM peak hour. An evaluation of the existing 2025 and projected 2030 horizon year with and without the project traffic was performed with an additional sensitivity analysis for the intersection of S Meridian at W Pioneer Avenue/Pioneer Way E. All the study area intersections are projected to operate within the LOS standard. As such, no off-site mitigation is proposed.

An initial review comment from city staff was received related to the intersection of 5th Street SW and W Meeker. Given it's close proximity to the Bell Place project, the City was considering potential restriping work at this intersection to accommodate a southbound left turn lane. This will be discussed further with city staff.

Appendix A

Traffic Volume Counts



Prepared for: **GVC Transportation Solutions**
Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

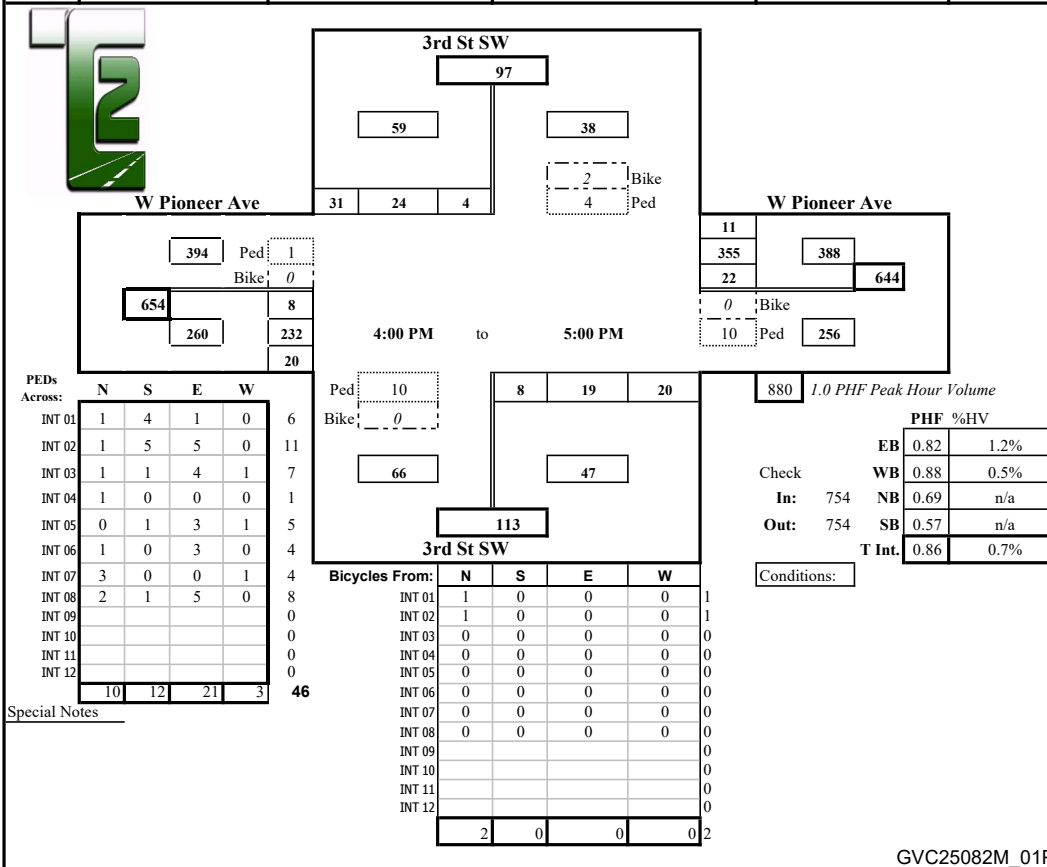
Intersection: 3rd St SW & W Pioneer Ave

Date of Count: Tue 11/18/2025

Location: Puyallup, Washington

Checked By: Jen

Time Interval	From North on (SB) 3rd St SW				From South on (NB) 3rd St SW				From East on (WB) W Pioneer Ave				From West on (EB) W Pioneer Ave				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	3	12	11	0	2	8	7	0	9	100	1	1	1	60	6	220
4:30 P	0	0	4	9	0	1	9	4	1	3	80	2	0	4	69	6	191
4:45 P	0	0	5	6	0	2	1	7	1	5	82	5	1	0	47	5	165
5:00 P	0	1	3	5	0	3	1	2	0	5	93	3	1	3	56	3	178
5:15 P	0	1	3	3	0	3	4	12	1	6	101	4	0	0	57	3	197
5:30 P	0	3	6	9	0	2	5	4	1	2	87	3	1	3	63	3	190
5:45 P	0	1	5	6	0	2	1	3	0	6	94	1	1	0	55	3	177
6:00 P	0	0	2	2	0	3	5	6	1	3	97	0	0	3	59	2	182
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	0	9	40	51	0	18	34	45	5	39	734	19	5	14	466	31	1500
Peak Hour: 4:00 PM to 5:00 PM																	
Total	0	4	24	31	0	8	19	20	2	22	355	11	3	8	232	20	754
Approach	59				47				388				260				754
%HV	n/a				n/a				0.5%				1.2%				0.7%
PHF	0.57				0.69				0.88				0.82				0.86



GVC25082M_01P



Prepared for:

GVC Transportation Solutions

Traffic Count Consultants, Inc.

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WBE/DBE

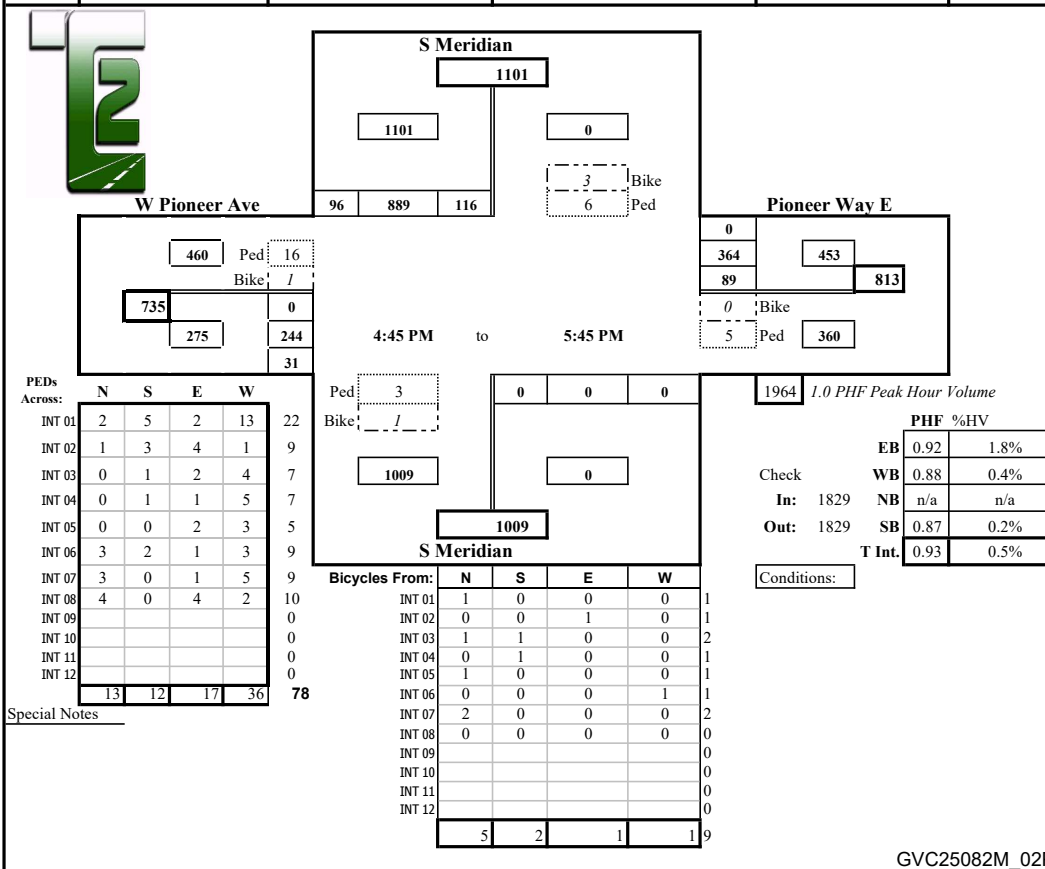
Intersection: S Meridian & E/W Pioneer Way/Ave

Date of Count: Tue 11/18/2025

Location: Puyallup, Washington

Checked By: Jen

Time Interval	From North on (SB) S Meridian				From South on (NB) S Meridian				From East on (WB) Pioneer Way E				From West on (EB) W Pioneer Ave				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	29	227	19	0	0	0	0	0	22	84	0	1	0	52	10	443
4:30 P	0	24	214	27	0	0	0	0	1	20	56	0	0	0	57	10	408
4:45 P	2	18	162	10	0	0	0	0	1	21	81	0	1	0	66	8	366
5:00 P	1	32	238	25	0	0	0	0	0	24	104	0	1	0	63	5	491
5:15 P	1	29	253	36	0	0	0	0	2	24	72	0	0	0	59	7	480
5:30 P	0	29	199	15	0	0	0	0	0	17	101	0	2	0	69	6	436
5:45 P	0	26	199	20	0	0	0	0	0	24	87	0	2	0	53	13	422
6:00 P	2	36	227	22	0	0	0	0	0	25	86	0	0	0	57	5	458
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	6	223	1719	174	0	0	0	0	4	177	671	0	7	0	476	64	3504
Peak Hour: 4:45 PM to 5:45 PM																	
Total	2	116	889	96	0	0	0	0	2	89	364	0	5	0	244	31	1829
Approach	1101				0				453				275				1829
%HV	0.2%				n/a				0.4%				1.8%				0.5%
PHF	0.87				n/a				0.88				0.92				0.93



GVC25082M_02P



Prepared for: **GVC Transportation Solutions**
Traffic Count Consultants, Inc.

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WBE/DBE

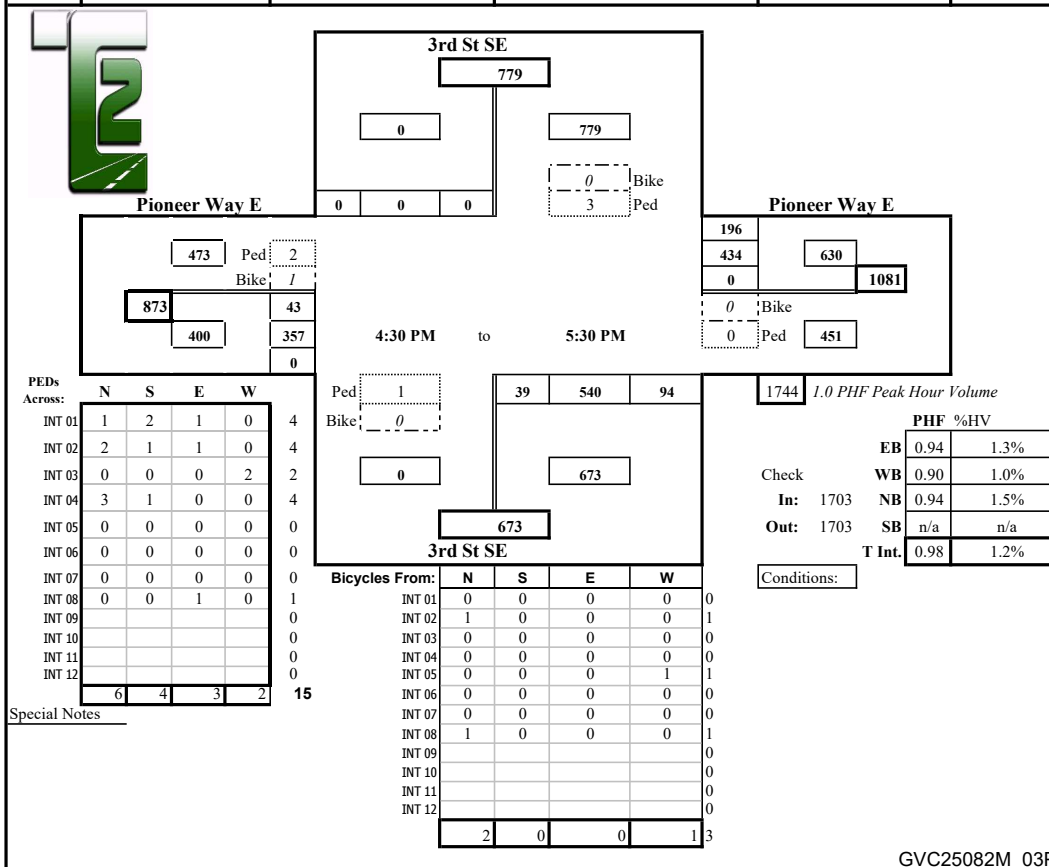
Intersection: 3rd St SE & Pioneer Way E

Date of Count: Tue 11/18/2025

Location: Puyallup, Washington

Checked By: Jen

Time Interval	From North on (SB) 3rd St SE				From South on (NB) 3rd St SE				From East on (WB) Pioneer Way E				From West on (EB) Pioneer Way E				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	0	0	0	1	12	161	25	2	0	94	43	1	9	81	0	425
4:30 P	0	0	0	0	2	6	136	23	1	0	94	43	0	14	72	0	388
4:45 P	0	0	0	0	1	12	133	34	2	0	88	59	1	13	80	0	419
5:00 P	0	0	0	0	6	10	127	23	2	0	128	47	1	7	91	0	433
5:15 P	0	0	0	0	2	6	152	19	2	0	97	38	0	12	91	0	415
5:30 P	0	0	0	0	1	11	128	18	0	0	121	52	3	11	95	0	436
5:45 P	0	0	0	0	1	5	139	19	1	0	107	35	2	8	67	0	380
6:00 P	0	0	0	0	3	7	90	8	0	0	112	39	0	7	96	0	359
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	0	0	0	0	17	69	1066	169	10	0	841	356	8	81	673	0	3255
Peak Hour: 4:30 PM to 5:30 PM																	
Total	0	0	0	0	10	39	540	94	6	0	434	196	5	43	357	0	1703
Approach	0				673				630				400				1703
%HV	n/a				1.5%				1.0%				1.3%				1.2%
PHF	n/a				0.94				0.90				0.94				0.98



GVC25082M_03P

Puyallup, Washington
 S Meridian & E/W Pioneer Way/Ave
 Tue 11/18/2025
 PM Peak: 4:00-6:00PM
 GVC25082M

5 Minute Max Queue
 North Leg - S Meridian



Time Int Ending	Pioneer to Meeker	Extends	S Meridian South of R/R Crossing
4:05:00 PM	Full	Yes	To Tracks
4:10:00 PM	Full	Yes	To Tracks
4:15:00 PM	Full	Yes	To Tracks
4:20:00 PM	Full	Yes	To Tracks
4:25:00 PM	6 vehicles	No - Train	
4:30:00 PM	Full	Yes	To Tracks
4:35:00 PM	Full	Yes	To Tracks
4:40:00 PM	Full	Yes	To Tracks
4:45:00 PM	3 vehicles	No - Train	
4:50:00 PM	Full	Yes	To Main St
4:55:00 PM	Full	Yes	To Tracks
5:00:00 PM	Full	Yes	To Main St
5:05:00 PM	Full	Yes	To Tracks
5:10:00 PM	Full	Yes	To Tracks
5:15:00 PM	Full	Yes	To Tracks
5:20:00 PM	Full	Yes	To Tracks
5:25:00 PM	Full	Yes	To Tracks
5:30:00 PM	Full	Yes	To Tracks
5:35:00 PM	Full	Yes	To Tracks
5:40:00 PM	4 vehicles	No - Train	
5:45:00 PM	Full	Yes	To Tracks
5:50:00 PM	Full	Yes	To Tracks
5:55:00 PM	Full	Yes	To Tracks
6:00:00 PM	Full	Yes	To Main St

Full = 8-10 vehicles

Note: "No-Train" means that in this 5 minute period, we hit the 2 minute Green cycle and traffic flowed through; not always clearing the whole queue, but vehicles were moving.

Puyallup, Washington
 S Meridian & E/W Pioneer Way/Ave
 Tue 11/18/2025
 PM Peak: 4:00-6:00PM
 GVC25082M

5 Minute Max Queue
 East Leg - E Pioneer Ave



Time Int Ending	S Meridian to 3rd St SE
4:05:00 PM	To 2nd St SE
4:10:00 PM	Midblock btwn 2nd & 3rd St SE
4:15:00 PM	To 3rd St SE
4:20:00 PM	Midblock btwn 2nd & 3rd St SE
4:25:00 PM	To 2nd St SE
4:30:00 PM	To 3rd St SE
4:35:00 PM	To 3rd St SE
4:40:00 PM	To 2nd St SE
4:45:00 PM	To 3rd St SE
4:50:00 PM	Midblock btwn 2nd & 3rd St SE
4:55:00 PM	To 3rd St SE
5:00:00 PM	To 3rd St SE
5:05:00 PM	To 3rd St SE
5:10:00 PM	To 2nd St SE
5:15:00 PM	To 2nd St SE
5:20:00 PM	Midblock btwn Meridian & 2nd St SE
5:25:00 PM	To 2nd St SE
5:30:00 PM	To 3rd St SE
5:35:00 PM	To 3rd St SE
5:40:00 PM	To 3rd St SE
5:45:00 PM	Midblock btwn Meridian & 2nd St SE
5:50:00 PM	To 2nd St SE
5:55:00 PM	Midblock btwn Meridian & 2nd St SE
6:00:00 PM	To 2nd St SE

Puyallup, Washington
 S Meridian & E/W Pioneer Way/Ave
 Tue 11/18/2025
 PM Peak: 4:00-6:00PM
 GVC25082M

5 Minute Max Queue
 West Leg - W Pioneer



Time Int Ending	Meridian to 3rd St SW	Extends	3rd St SW to 5th St SW
4:05:00 PM	Midblock btwn 2nd St & 3rd St SW	No	
4:10:00 PM	To 3rd St SW	Yes	Midblock btwn 3rd St & 4th St SW
4:15:00 PM	To 3rd St SW	Yes	Midblock btwn 3rd St & 4th St SW
4:20:00 PM	Midblock btwn 2nd St & 3rd St SW	No	
4:25:00 PM	To 3rd St SW	Yes	To 4th St SW
4:30:00 PM	To 3rd St SW	Yes	To 5th St SW
4:35:00 PM	To 3rd St SW	Yes	To 4th St SW
4:40:00 PM	To 2nd St SW	No	
4:45:00 PM	To 2nd St SW	No	
4:50:00 PM	To 3rd St SW	Yes	To 4th St SW
4:55:00 PM	To 3rd St SW	Yes	To 4th St SW
5:00:00 PM	To 3rd St SW	Yes	Midblock btwn 3rd St & 4th St SW
5:05:00 PM	To 3rd St SW	No	
5:10:00 PM	Midblock btwn 2nd St & 3rd St SW	No	
5:15:00 PM	Midblock btwn 2nd St & 3rd St SW	No	
5:20:00 PM	To 2nd St SW	No	
5:25:00 PM	To 3rd St SW	No	
5:30:00 PM	To 3rd St SW	No	
5:35:00 PM	To 3rd St SW	No	
5:40:00 PM	To 3rd St SW	Yes	Midblock btwn 3rd St & 4th St SW
5:45:00 PM	To 2nd St SW	No	
5:50:00 PM	Midblock btwn 2nd St & 3rd St SW	No	
5:55:00 PM	To 2nd St SW	No	
6:00:00 PM	To 2nd St SW	No	

Appendix B

Traffic Volume Calculation Worksheets

Puyallup Mixed-Use

Trip Generation

Proposed Use

AM Peak Hour Trip Generation																	
Site Plan Description	LUC	ITE Description	Variable	Value	Trip Rate	Distribution		Total Trips			Int. Capture		Pass-By Trips		Total Trips		
						In	Out	In	Out	Total	%	Total	%	Total	In	Out	Total
Multifamily Units (AOB)	221	Multifamily Housing (Mid-Rise) Close to Rail Transit	Dwelling Units	140.0	0.25	15%	85%	5.2	29.8	35.0	17%	6.0	0.0	0.0	5.3	29.7	35.0
Coffee Shop	936	Coffee/Donut Shop without Drive-Through Window	1,000 sqft	2.3	91.02	51%	49%	106.7	102.6	209.3	3%	6.0	50%	101.7	54.9	52.7	107.6
Multifamily Units (Bell Place)	221	Multifamily Housing (Mid-Rise) Close to Rail Transit	Dwelling Units	100.0	0.25	15%	85%	3.7	21.3	25.0	0	0.0	0.0	0.0	3.8	21.2	25.0
Total								115.6	153.7	269.3		12.0		101.7	64.0	103.6	167.6

PM Peak Hour Trip Generation																	
Site Plan Description	LUC	ITE Description	Variable	Value	Trip Rate	Distribution		Total Trips			Int. Capture		Pass-By Trips		Total Trips		
						In	Out	In	Out	Total	%	Total	%	Total	In	Out	Total
Multifamily Units (AOB)	221	Multifamily Housing (Mid-Rise) Close to Rail Transit	Dwelling Units	140.0	0.25	74%	26%	25.9	9.1	35.0	17%	6.0	0%	0.0	21.5	7.5	29.0
Coffee Shop	936	Coffee/Donut Shop without Drive-Through Window	1,000 sqft	2.3	31.53	50%	50%	36.2	36.3	72.5	8%	6.0	55%	36.6	15.0	14.9	29.9
Multifamily Units (Bell Place)	221	Multifamily Housing (Mid-Rise) Close to Rail Transit	Dwelling Units	100.0	0.25	74%	26%	18.5	6.5	25.0	0%	0.0	0%	0.0	18.5	6.5	25.0
Total								80.6	51.9	132.5		12.0		36.6	55.0	28.9	83.9

Existing Use

PM Peak Hour Trip Generation																	
Site Plan Description	LUC	ITE Description	Variable	Value	Trip Rate	Distribution		Total Trips			Int. Capture		Pass-By Trips		Total Trips		
						In	Out	In	Out	Total	%	Total	%	Total	In	Out	Total
Single Family Home	210	Single-Family Detached Housing	Dwelling Units	1.0	0.93	62%	38%	0.6	0.3	0.9	0	0.0	0%	0.0	0.6	0.3	0.9
Total								0.6	0.3	0.9					0.6	0.3	0.9

AM Peak Hour Trip Generation																	
Site Plan Description	LUC	ITE Description	Variable	Value	Trip Rate	Distribution		Total Trips			Int. Capture		Pass-By Trips		Total Trips		
						In	Out	In	Out	Total	%	Total	%	Total	In	Out	Total
Single Family Home	210	Single-Family Detached Housing	Dwelling Units	1.0	0.70	27%	73%	0.2	0.5	0.7	0	0.0	0.0	0.0	0.2	0.5	0.7
Total								0.2	0.5	0.7					0.2	0.5	0.7

Appendix C

Operations Analysis Worksheets

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	230	20	20	355	10	10	20	20	5	25	30
Future Vol, veh/h	10	230	20	20	355	10	10	20	20	5	25	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	12	267	23	23	413	12	12	23	23	6	29	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	424	0	0	291	0	0	776	773	279	767	779	419
Stage 1	-	-	-	-	-	-	302	302	-	465	465	-
Stage 2	-	-	-	-	-	-	474	471	-	302	314	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1140	-	-	1277	-	-	316	331	762	320	328	637
Stage 1	-	-	-	-	-	-	709	666	-	579	565	-
Stage 2	-	-	-	-	-	-	573	561	-	709	658	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1140	-	-	1277	-	-	262	319	762	278	317	637
Mov Cap-2 Maneuver	-	-	-	-	-	-	262	319	-	278	317	-
Stage 1	-	-	-	-	-	-	700	658	-	566	551	-
Stage 2	-	-	-	-	-	-	501	548	-	655	650	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.31			0.41			15.73			15.38		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	393	68	-	-	93	-	-	416
HCM Lane V/C Ratio	0.148	0.01	-	-	0.018	-	-	0.168
HCM Ctrl Dly (s/v)	15.7	8.2	0	-	7.9	0	-	15.4
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0.6

Lanes, Volumes, Timings
2: S Meridian & Pioneer Ave/Pioneer Way E

Existing 2025
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	245	30	90	365	0	0	0	0	115	890	95
Future Volume (vph)	0	245	30	90	365	0	0	0	0	115	890	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		658			588			688			670	
Travel Time (s)		15.0			13.4			15.6			15.2	
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		8		7	4						2	
Permitted Phases				4						2		
Detector Phase		8		7	4					2	2	
Switch Phase												
Minimum Initial (s)		5.0		5.0	5.0					10.0	10.0	
Minimum Split (s)		22.5		9.5	22.5					23.0	23.0	
Total Split (s)		30.0		10.0	40.0					67.0	67.0	
Total Split (%)		28.0%		9.3%	37.4%					62.6%	62.6%	
Maximum Green (s)		26.0		6.0	36.0					63.0	63.0	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0						0.0	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		1.0		1.0	1.0					1.0	1.0	
Recall Mode		None		None	None					Min	Min	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Don't Walk (s)		10.0			10.0					12.0	12.0	
Pedestrian Calls (#/hr)		3			6					16	16	

Intersection Summary

Area Type: Other

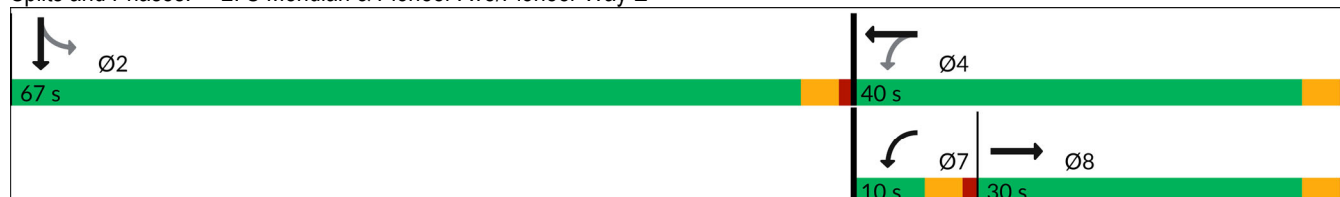
Cycle Length: 107

Actuated Cycle Length: 55.3

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 2: S Meridian & Pioneer Ave/Pioneer Way E



HCM 7th Signalized Intersection Summary 2: S Meridian & Pioneer Ave/Pioneer Way E

Existing 2025
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	245	30	90	365	0	0	0	0	115	890	95
Future Volume (veh/h)	0	245	30	90	365	0	0	0	0	115	890	95
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1885	1885	0				1885	1885	1870
Adj Flow Rate, veh/h	0	263	32	97	392	0				124	957	102
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	1	1	0				1	1	2
Cap, veh/h	0	362	44	398	753	0				158	1215	129
Arrive On Green	0.00	0.22	0.22	0.08	0.40	0.00				0.41	0.41	0.41
Sat Flow, veh/h	0	1631	198	1795	1885	0				387	2982	318
Grp Volume(v), veh/h	0	0	295	97	392	0				598	0	585
Grp Sat Flow(s),veh/h/ln	0	0	1829	1795	1885	0				1866	0	1820
Q Serve(g_s), s	0.0	0.0	6.2	1.5	6.5	0.0				11.6	0.0	11.6
Cycle Q Clear(g_c), s	0.0	0.0	6.2	1.5	6.5	0.0				11.6	0.0	11.6
Prop In Lane	0.00		0.11	1.00		0.00				0.21		0.17
Lane Grp Cap(c), veh/h	0	0	406	398	753	0				760	0	742
V/C Ratio(X)	0.00	0.00	0.73	0.24	0.52	0.00				0.79	0.00	0.79
Avail Cap(c_a), veh/h	0	0	1147	512	1637	0				2836	0	2767
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	15.0	10.1	9.4	0.0				10.7	0.0	10.7
Incr Delay (d2), s/veh	0.0	0.0	0.9	0.1	0.2	0.0				0.7	0.0	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	2.2	0.5	2.0	0.0				3.6	0.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	15.9	10.2	9.6	0.0				11.4	0.0	11.4
LnGrp LOS			B	B	A					B		B
Approach Vol, veh/h	295		489			1183						
Approach Delay, s/veh	15.9		9.8			11.4						
Approach LOS	B		A			B						
Timer - Assigned Phs	2		4		7		8					
Phs Duration (G+Y+Rc), s	20.9		20.6		7.4		13.2					
Change Period (Y+Rc), s	4.0		4.0		4.0		4.0					
Max Green Setting (Gmax), s	63.0		36.0		6.0		26.0					
Max Q Clear Time (g_c+I1), s	13.6		8.5		3.5		8.2					
Green Ext Time (p_c), s	3.1		0.8		0.0		0.6					
Intersection Summary												
HCM 7th Control Delay, s/veh	11.7											
HCM 7th LOS	B											
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
3: 3rd St SE & Pioneer Way E

Existing 2025
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	355	0	0	435	195	40	540	95	0	0	0
Future Volume (vph)	45	355	0	0	435	195	40	540	95	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	0		0	0		0	0		0
Storage Lanes	1		0	0		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		588			618			864			339	
Travel Time (s)		13.4			14.0			19.6			7.7	
Turn Type	pm+pt	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	3	8			4			2				
Permitted Phases	8					4	2		2			
Detector Phase	3	8			4	4	2	2	2			
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0	5.0	10.0	10.0	10.0			
Minimum Split (s)	10.0	25.5			32.0	32.0	27.0	27.0	27.0			
Total Split (s)	15.0	58.0			43.0	43.0	46.0	46.0	46.0			
Total Split (%)	14.4%	55.8%			41.3%	41.3%	44.2%	44.2%	44.2%			
Maximum Green (s)	10.0	53.0			38.0	38.0	41.0	41.0	41.0			
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0	5.0			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?	Yes				Yes	Yes						
Vehicle Extension (s)	1.0	1.0			1.0	1.0	1.0	1.0	1.0			
Recall Mode	None	None			None	None	Min	Min	Min			
Walk Time (s)		7.0			7.0	7.0	7.0	7.0	7.0			
Flash Don't Walk (s)		13.0			13.0	13.0	15.0	15.0	15.0			
Pedestrian Calls (#/hr)		1			3	3	0	0	0			

Intersection Summary

Area Type: Other

Cycle Length: 104

Actuated Cycle Length: 45.9

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: 3rd St SE & Pioneer Way E



HCM 7th Signalized Intersection Summary

3: 3rd St SE & Pioneer Way E

Existing 2025
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	45	355	0	0	435	195	40	540	95	0	0	0	
Future Volume (veh/h)	45	355	0	0	435	195	40	540	95	0	0	0	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0				
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Work Zone On Approach	No			No			No						
Adj Sat Flow, veh/h/ln	1885	1885	0	0	1885	1885	1870	1870	1870				
Adj Flow Rate, veh/h	46	362	0	0	444	199	41	551	97				
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98				
Percent Heavy Veh, %	1	1	0	0	1	1	2	2	2				
Cap, veh/h	344	906	0	0	567	478	66	885	404				
Arrive On Green	0.05	0.48	0.00	0.00	0.30	0.30	0.26	0.26	0.26				
Sat Flow, veh/h	1795	1885	0	0	1885	1590	252	3383	1545				
Grp Volume(v), veh/h	46	362	0	0	444	199	303	289	97				
Grp Sat Flow(s),veh/h/ln	1795	1885	0	0	1885	1590	1858	1777	1545				
Q Serve(g_s), s	0.6	4.8	0.0	0.0	8.3	3.9	5.6	5.6	1.9				
Cycle Q Clear(g_c), s	0.6	4.8	0.0	0.0	8.3	3.9	5.6	5.6	1.9				
Prop In Lane	1.00		0.00	0.00		1.00	0.14		1.00				
Lane Grp Cap(c), veh/h	344	906	0	0	567	478	486	465	404				
V/C Ratio(X)	0.13	0.40	0.00	0.00	0.78	0.42	0.62	0.62	0.24				
Avail Cap(c_a), veh/h	717	2579	0	0	1849	1559	1966	1880	1635				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00				
Uniform Delay (d), s/veh	8.6	6.5	0.0	0.0	12.4	10.8	12.6	12.6	11.3				
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	0.9	0.2	0.5	0.5	0.1				
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
%ile BackOfQ(50%),veh/ln	0.2	1.2	0.0	0.0	2.8	1.1	1.9	1.8	0.5				
Unsig. Movement Delay, s/veh													
LnGrp Delay(d), s/veh	8.6	6.6	0.0	0.0	13.3	11.0	13.1	13.1	11.4				
LnGrp LOS	A	A			B	B	B	B	B				
Approach Vol, veh/h	408			643			689						
Approach Delay, s/veh	6.8			12.6			12.9						
Approach LOS	A			B			B						
Timer - Assigned Phs	2		3	4		8							
Phs Duration (G+Y+Rc), s	15.1		7.0	16.7		23.6							
Change Period (Y+Rc), s	5.0		5.0	5.0		5.0							
Max Green Setting (Gmax), s	41.0		10.0	38.0		53.0							
Max Q Clear Time (g_c+I1), s	7.6		2.6	10.3		6.8							
Green Ext Time (p_c), s	1.3		0.0	1.0		0.8							
Intersection Summary													
HCM 7th Control Delay, s/veh	11.3												
HCM 7th LOS	B												

Lanes, Volumes, Timings
2: S Meridian & Pioneer Ave/Pioneer Way E

Projected 2030 without Project
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	260	35	95	390	0	0	0	0	125	955	105
Future Volume (vph)	0	260	35	95	390	0	0	0	0	125	955	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		658			588			688			670	
Travel Time (s)		15.0			13.4			15.6			15.2	
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		8		7	4						2	
Permitted Phases				4						2		
Detector Phase		8		7	4					2	2	
Switch Phase												
Minimum Initial (s)		5.0		5.0	5.0					10.0	10.0	
Minimum Split (s)		22.5		9.5	22.5					23.0	23.0	
Total Split (s)		30.0		10.0	40.0					67.0	67.0	
Total Split (%)		28.0%		9.3%	37.4%					62.6%	62.6%	
Maximum Green (s)		26.0		6.0	36.0					63.0	63.0	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0						0.0	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		1.0		1.0	1.0					1.0	1.0	
Recall Mode		None		None	None					Min	Min	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Don't Walk (s)		10.0			10.0					12.0	12.0	
Pedestrian Calls (#/hr)		3			6					16	16	

Intersection Summary

Area Type: Other

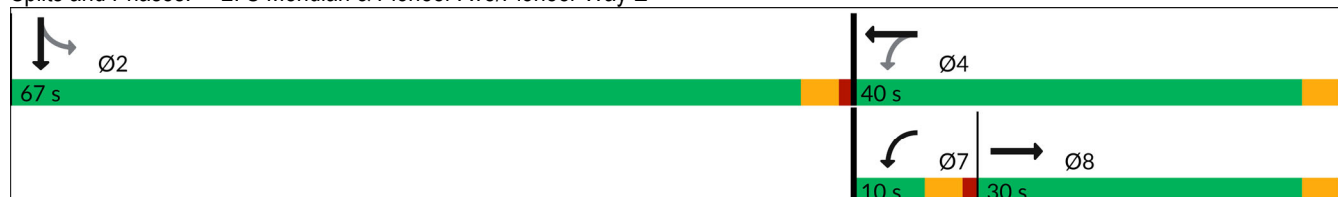
Cycle Length: 107

Actuated Cycle Length: 105.4

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Splits and Phases: 2: S Meridian & Pioneer Ave/Pioneer Way E



HCM 7th Signalized Intersection Summary 2: S Meridian & Pioneer Ave/Pioneer Way E

Projected 2030 without Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	260	35	95	390	0	0	0	0	125	955	105
Future Volume (veh/h)	0	260	35	95	390	0	0	0	0	125	955	105
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach	No			No						No		
Adj Sat Flow, veh/h/ln	0	1870	1870	1885	1885	0				1885	1885	1870
Adj Flow Rate, veh/h	0	433	58	158	650	0				208	1592	175
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60				0.60	0.60	0.60
Percent Heavy Veh, %	0	2	2	1	1	0				1	1	2
Cap, veh/h	0	408	55	175	662	0				224	1697	184
Arrive On Green	0.00	0.25	0.25	0.06	0.35	0.00				0.57	0.57	0.57
Sat Flow, veh/h	0	1610	216	1795	1885	0				393	2971	323
Grp Volume(v), veh/h	0	0	491	158	650	0				988	0	988
Grp Sat Flow(s),veh/h/ln	0	0	1826	1795	1885	0				1866	0	1822
Q Serve(g_s), s	0.0	0.0	26.0	6.0	35.0	0.0				49.5	0.0	52.1
Cycle Q Clear(g_c), s	0.0	0.0	26.0	6.0	35.0	0.0				49.5	0.0	52.1
Prop In Lane	0.00		0.12	1.00		0.00				0.21		0.18
Lane Grp Cap(c), veh/h	0	0	463	175	662	0				1065	0	1040
V/C Ratio(X)	0.00	0.00	1.06	0.90	0.98	0.00				0.93	0.00	0.95
Avail Cap(c_a), veh/h	0	0	463	175	662	0				1146	0	1119
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	38.3	30.7	33.0	0.0				20.1	0.0	20.6
Incr Delay (d2), s/veh	0.0	0.0	58.9	40.3	30.4	0.0				11.8	0.0	15.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	19.0	4.8	21.1	0.0				23.0	0.0	24.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	97.1	71.0	63.3	0.0				31.8	0.0	35.9
LnGrp LOS			F	E	E					C		D
Approach Vol, veh/h	491			808			1975					
Approach Delay, s/veh	97.1			64.8			33.8					
Approach LOS	F			E			C					
Timer - Assigned Phs	2			4			7		8			
Phs Duration (G+Y+Rc), s	62.6			40.0			10.0		30.0			
Change Period (Y+Rc), s	4.0			4.0			4.0		4.0			
Max Green Setting (Gmax), s	63.0			36.0			6.0		26.0			
Max Q Clear Time (g_c+l1), s	54.1			37.0			8.0		28.0			
Green Ext Time (p_c), s	4.5			0.0			0.0		0.0			
Intersection Summary												
HCM 7th Control Delay, s/veh				51.0								
HCM 7th LOS				D								
Notes												
User approved pedestrian interval to be less than phase max green.												

Intersection												
Int Delay, s/veh	3.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	250	25	40	390	10	10	20	35	5	25	35
Future Vol, veh/h	10	250	25	40	390	10	10	20	35	5	25	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	12	291	29	47	453	12	12	23	41	6	29	41

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	465	0	0	320	0	0	890	887	305	878	895	459
Stage 1	-	-	-	-	-	-	328	328	-	552	552	-
Stage 2	-	-	-	-	-	-	561	558	-	326	343	-
Critical Hdwy	4.11	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.209	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1102	-	-	1246	-	-	265	284	737	270	281	604
Stage 1	-	-	-	-	-	-	687	649	-	520	516	-
Stage 2	-	-	-	-	-	-	514	513	-	689	639	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1102	-	-	1246	-	-	207	267	737	219	263	604
Mov Cap-2 Maneuver	-	-	-	-	-	-	207	267	-	219	263	-
Stage 1	-	-	-	-	-	-	678	640	-	493	490	-
Stage 2	-	-	-	-	-	-	428	487	-	619	631	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.29	0.73	16.79	17.21
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	381	62	-	-	163	-	-	370
HCM Lane V/C Ratio	0.199	0.011	-	-	0.037	-	-	0.204
HCM Ctrl Dly (s/v)	16.8	8.3	0	-	8	0	-	17.2
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0.8

Lanes, Volumes, Timings
2: S Meridian & Pioneer Ave/Pioneer Way E

Projected 2030 with Project
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	275	35	95	410	0	0	0	0	125	955	110
Future Volume (vph)	0	275	35	95	410	0	0	0	0	125	955	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		658			588			688			670	
Travel Time (s)		15.0			13.4			15.6			15.2	
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		8		7	4						2	
Permitted Phases				4						2		
Detector Phase		8		7	4					2	2	
Switch Phase												
Minimum Initial (s)		5.0		5.0	5.0					10.0	10.0	
Minimum Split (s)		22.5		9.5	22.5					23.0	23.0	
Total Split (s)		30.0		10.0	40.0					67.0	67.0	
Total Split (%)		28.0%		9.3%	37.4%					62.6%	62.6%	
Maximum Green (s)		26.0		6.0	36.0					63.0	63.0	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0						0.0	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		1.0		1.0	1.0					1.0	1.0	
Recall Mode		None		None	None					Min	Min	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Don't Walk (s)		10.0			10.0					12.0	12.0	
Pedestrian Calls (#/hr)		3			6					16	16	

Intersection Summary

Area Type: Other

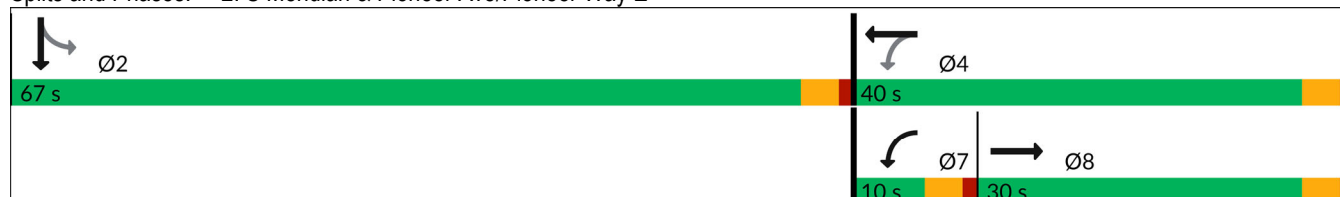
Cycle Length: 107

Actuated Cycle Length: 63

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 2: S Meridian & Pioneer Ave/Pioneer Way E



HCM 7th Signalized Intersection Summary 2: S Meridian & Pioneer Ave/Pioneer Way E

Projected 2030 with Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	275	35	95	410	0	0	0	0	125	955	110
Future Volume (veh/h)	0	275	35	95	410	0	0	0	0	125	955	110
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach	No			No						No		
Adj Sat Flow, veh/h/ln	0	1870	1870	1885	1885	0				1885	1885	1870
Adj Flow Rate, veh/h	0	296	38	102	441	0				134	1027	118
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93				0.93	0.93	0.93
Percent Heavy Veh, %	0	2	2	1	1	0				1	1	2
Cap, veh/h	0	383	49	367	758	0				164	1255	144
Arrive On Green	0.00	0.24	0.24	0.08	0.40	0.00				0.42	0.42	0.42
Sat Flow, veh/h	0	1619	208	1795	1885	0				386	2957	339
Grp Volume(v), veh/h	0	0	334	102	441	0				647	0	632
Grp Sat Flow(s),veh/h/ln	0	0	1827	1795	1885	0				1866	0	1816
Q Serve(g_s), s	0.0	0.0	7.9	1.8	8.4	0.0				14.1	0.0	14.2
Cycle Q Clear(g_c), s	0.0	0.0	7.9	1.8	8.4	0.0				14.1	0.0	14.2
Prop In Lane	0.00		0.11	1.00		0.00				0.21		0.19
Lane Grp Cap(c), veh/h	0	0	432	367	758	0				792	0	771
V/C Ratio(X)	0.00	0.00	0.77	0.28	0.58	0.00				0.82	0.00	0.82
Avail Cap(c_a), veh/h	0	0	1030	458	1471	0				2547	0	2480
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	16.5	11.2	10.8	0.0				11.7	0.0	11.7
Incr Delay (d2), s/veh	0.0	0.0	1.1	0.2	0.3	0.0				0.8	0.0	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	3.0	0.6	2.8	0.0				4.6	0.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	17.6	11.4	11.0	0.0				12.5	0.0	12.5
LnGrp LOS			B	B	B					B		B
Approach Vol, veh/h	334		543			1279						
Approach Delay, s/veh	17.6		11.1			12.5						
Approach LOS	B		B			B						
Timer - Assigned Phs	2		4		7		8					
Phs Duration (G+Y+Rc), s	23.6		22.6		7.6		14.9					
Change Period (Y+Rc), s	4.0		4.0		4.0		4.0					
Max Green Setting (Gmax), s	63.0		36.0		6.0		26.0					
Max Q Clear Time (g_c+I1), s	16.2		10.4		3.8		9.9					
Green Ext Time (p_c), s	3.4		1.0		0.0		0.7					
Intersection Summary												
HCM 7th Control Delay, s/veh			13.0									
HCM 7th LOS			B									
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings
3: 3rd St SE & Pioneer Way E

Projected 2030 with Project
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	390	0	0	485	210	45	580	100	0	0	0
Future Volume (vph)	50	390	0	0	485	210	45	580	100	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	0		0	0		0	0		0
Storage Lanes	1		0	0		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		588			618			864			339	
Travel Time (s)		13.4			14.0			19.6			7.7	
Turn Type	pm+pt	NA			NA	Perm	Perm	NA	Perm			
Protected Phases	3	8			4			2				
Permitted Phases	8					4	2		2			
Detector Phase	3	8			4	4	2	2	2			
Switch Phase												
Minimum Initial (s)	5.0	5.0			5.0	5.0	10.0	10.0	10.0			
Minimum Split (s)	10.0	25.5			32.0	32.0	27.0	27.0	27.0			
Total Split (s)	15.0	58.0			43.0	43.0	46.0	46.0	46.0			
Total Split (%)	14.4%	55.8%			41.3%	41.3%	44.2%	44.2%	44.2%			
Maximum Green (s)	10.0	53.0			38.0	38.0	41.0	41.0	41.0			
Yellow Time (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0			
All-Red Time (s)	2.0	2.0			2.0	2.0	2.0	2.0	2.0			
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0	5.0			
Lead/Lag	Lead				Lag	Lag						
Lead-Lag Optimize?	Yes				Yes	Yes						
Vehicle Extension (s)	1.0	1.0			1.0	1.0	1.0	1.0	1.0			
Recall Mode	None	None			None	None	Min	Min	Min			
Walk Time (s)		7.0			7.0	7.0	7.0	7.0	7.0			
Flash Don't Walk (s)		13.0			13.0	13.0	15.0	15.0	15.0			
Pedestrian Calls (#/hr)		1			3	3	0	0	0			

Intersection Summary

Area Type: Other

Cycle Length: 104

Actuated Cycle Length: 50.8

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: 3rd St SE & Pioneer Way E



HCM 7th Signalized Intersection Summary

3: 3rd St SE & Pioneer Way E

Projected 2030 with Project
PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	50	390	0	0	485	210	45	580	100	0	0	0	
Future Volume (veh/h)	50	390	0	0	485	210	45	580	100	0	0	0	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0				
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.97				
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Work Zone On Approach	No			No			No						
Adj Sat Flow, veh/h/ln	1885	1885	0	0	1885	1885	1870	1870	1870				
Adj Flow Rate, veh/h	51	398	0	0	495	214	46	592	102				
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98				
Percent Heavy Veh, %	1	1	0	0	1	1	2	2	2				
Cap, veh/h	338	947	0	0	612	516	66	845	387				
Arrive On Green	0.05	0.50	0.00	0.00	0.32	0.32	0.25	0.25	0.25				
Sat Flow, veh/h	1795	1885	0	0	1885	1590	262	3372	1545				
Grp Volume(v), veh/h	51	398	0	0	495	214	326	312	102				
Grp Sat Flow(s),veh/h/ln	1795	1885	0	0	1885	1590	1857	1777	1545				
Q Serve(g_s), s	0.7	5.4	0.0	0.0	9.7	4.2	6.5	6.5	2.1				
Cycle Q Clear(g_c), s	0.7	5.4	0.0	0.0	9.7	4.2	6.5	6.5	2.1				
Prop In Lane	1.00		0.00	0.00		1.00	0.14		1.00				
Lane Grp Cap(c), veh/h	338	947	0	0	612	516	465	445	387				
V/C Ratio(X)	0.15	0.42	0.00	0.00	0.81	0.41	0.70	0.70	0.26				
Avail Cap(c_a), veh/h	685	2470	0	0	1771	1494	1882	1801	1565				
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00				
Uniform Delay (d), s/veh	8.6	6.4	0.0	0.0	12.5	10.7	13.8	13.8	12.2				
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.0	1.0	0.2	0.7	0.8	0.1				
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
%ile BackOfQ(50%),veh/ln	0.2	1.4	0.0	0.0	3.3	1.2	2.3	2.2	0.6				
Unsig. Movement Delay, s/veh													
LnGrp Delay(d), s/veh	8.7	6.5	0.0	0.0	13.5	10.9	14.5	14.5	12.3				
LnGrp LOS	A	A			B	B	B	B	B				
Approach Vol, veh/h	449			709			740						
Approach Delay, s/veh	6.7			12.7			14.2						
Approach LOS	A			B			B						
Timer - Assigned Phs	2		3	4		8							
Phs Duration (G+Y+Rc), s	15.1		7.2	18.1		25.3							
Change Period (Y+Rc), s	5.0		5.0	5.0		5.0							
Max Green Setting (Gmax), s	41.0		10.0	38.0		53.0							
Max Q Clear Time (g_c+l1), s	8.5		2.7	11.7		7.4							
Green Ext Time (p_c), s	1.4		0.0	1.2		0.9							
Intersection Summary													
HCM 7th Control Delay, s/veh	11.9												
HCM 7th LOS	B												

Lanes, Volumes, Timings
2: S Meridian & Pioneer Ave/Pioneer Way E

Existing 2025 Calibrated PHF
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	245	30	90	365	0	0	0	0	115	890	95
Future Volume (vph)	0	245	30	90	365	0	0	0	0	115	890	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		658			588			688			670	
Travel Time (s)		17.9			16.0			18.8			18.3	
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		8		7	4							2
Permitted Phases				4						2		
Detector Phase		8		7	4					2		2
Switch Phase												
Minimum Initial (s)		5.0		5.0	5.0					10.0	10.0	
Minimum Split (s)		22.5		9.5	22.5					23.0	23.0	
Total Split (s)		30.0		10.0	40.0					67.0	67.0	
Total Split (%)		28.0%		9.3%	37.4%					62.6%	62.6%	
Maximum Green (s)		26.0		6.0	36.0					63.0	63.0	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0							0.0
Total Lost Time (s)		4.0		4.0	4.0							4.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		1.0		1.0	1.0					1.0	1.0	
Recall Mode		None		None	None					Min	Min	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Don't Walk (s)		10.0			10.0					12.0	12.0	
Pedestrian Calls (#/hr)		3			6					16	16	

Intersection Summary

Area Type: Other

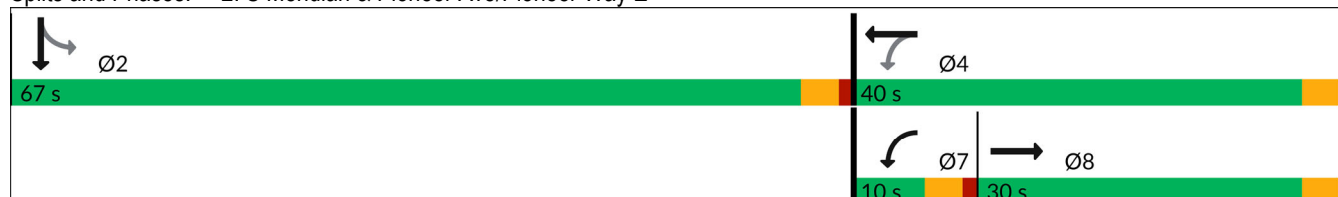
Cycle Length: 107

Actuated Cycle Length: 101.8

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Splits and Phases: 2: S Meridian & Pioneer Ave/Pioneer Way E



HCM 7th Signalized Intersection Summary 2: S Meridian & Pioneer Ave/Pioneer Way E

Existing 2025 Calibrated PHF
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	245	30	90	365	0	0	0	0	115	890	95
Future Volume (veh/h)	0	245	30	90	365	0	0	0	0	115	890	95
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1885	1885	0				1885	1885	1870
Adj Flow Rate, veh/h	0	408	50	150	608	0				192	1483	158
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60				0.60	0.60	0.60
Percent Heavy Veh, %	0	2	2	1	1	0				1	1	2
Cap, veh/h	0	435	53	210	702	0				212	1622	171
Arrive On Green	0.00	0.27	0.27	0.06	0.37	0.00				0.54	0.54	0.54
Sat Flow, veh/h	0	1630	200	1795	1885	0				390	2984	315
Grp Volume(v), veh/h	0	0	458	150	608	0				919	0	914
Grp Sat Flow(s),veh/h/ln	0	0	1829	1795	1885	0				1866	0	1823
Q Serve(g_s), s	0.0	0.0	23.3	5.6	28.4	0.0				42.1	0.0	43.7
Cycle Q Clear(g_c), s	0.0	0.0	23.3	5.6	28.4	0.0				42.1	0.0	43.7
Prop In Lane	0.00		0.11	1.00		0.00				0.21		0.17
Lane Grp Cap(c), veh/h	0	0	488	210	702	0				1014	0	991
V/C Ratio(X)	0.00	0.00	0.94	0.71	0.87	0.00				0.91	0.00	0.92
Avail Cap(c_a), veh/h	0	0	500	210	713	0				1236	0	1207
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	34.1	25.7	27.7	0.0				19.5	0.0	19.9
Incr Delay (d2), s/veh	0.0	0.0	24.8	9.5	10.4	0.0				7.6	0.0	9.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	13.6	2.9	14.5	0.0				19.2	0.0	19.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	58.9	35.2	38.0	0.0				27.1	0.0	29.3
LnGrp LOS	E			D	D					C		C
Approach Vol, veh/h	458			758						1833		
Approach Delay, s/veh	58.9			37.5						28.2		
Approach LOS	E			D						C		
Timer - Assigned Phs	2			4			7		8			
Phs Duration (G+Y+Rc), s	55.7			39.4			10.0		29.4			
Change Period (Y+Rc), s	4.0			4.0			4.0		4.0			
Max Green Setting (Gmax), s	63.0			36.0			6.0		26.0			
Max Q Clear Time (g_c+l1), s	45.7			30.4			7.6		25.3			
Green Ext Time (p_c), s	6.1			0.9			0.0		0.1			
Intersection Summary												
HCM 7th Control Delay, s/veh				35.1								
HCM 7th LOS				D								
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings

2: S Meridian & Pioneer Ave/Pioneer Way E

Projected 2030 without Project Calibrated PHF

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	260	35	95	390	0	0	0	0	125	955	105
Future Volume (vph)	0	260	35	95	390	0	0	0	0	125	955	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		658			588			688			670	
Travel Time (s)		15.0			13.4			15.6			15.2	
Turn Type		NA		pm+pt	NA					Perm		NA
Protected Phases		8		7	4							2
Permitted Phases				4						2		
Detector Phase		8		7	4					2		2
Switch Phase												
Minimum Initial (s)		5.0		5.0	5.0					10.0	10.0	
Minimum Split (s)		22.5		9.5	22.5					23.0	23.0	
Total Split (s)		30.0		10.0	40.0					67.0	67.0	
Total Split (%)		28.0%		9.3%	37.4%					62.6%	62.6%	
Maximum Green (s)		26.0		6.0	36.0					63.0	63.0	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0							0.0
Total Lost Time (s)		4.0		4.0	4.0							4.0
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		1.0		1.0	1.0					1.0	1.0	
Recall Mode		None		None	None					Min	Min	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Don't Walk (s)		10.0			10.0					12.0	12.0	
Pedestrian Calls (#/hr)		3			6					16	16	

Intersection Summary

Area Type: Other

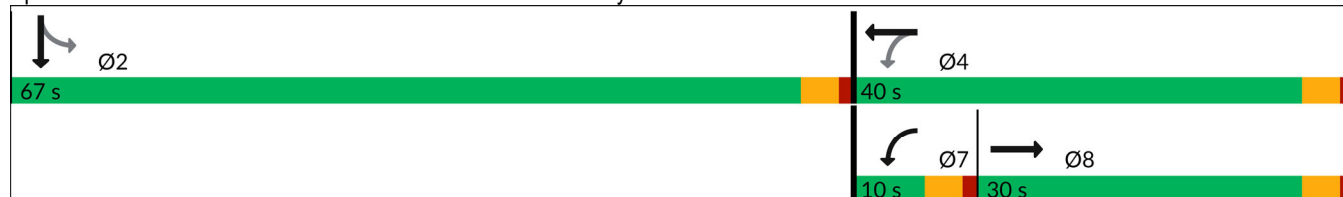
Cycle Length: 107

Actuated Cycle Length: 105.4

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Splits and Phases: 2: S Meridian & Pioneer Ave/Pioneer Way E



HCM 7th Signalized Intersection Summary 2: S Meridian & Pioneer Ave/Pioneer Way E

Projected 2030 without Project Calibrated PHF
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	260	35	95	390	0	0	0	0	125	955	105
Future Volume (veh/h)	0	260	35	95	390	0	0	0	0	125	955	105
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach	No			No						No		
Adj Sat Flow, veh/h/ln	0	1870	1870	1885	1885	0				1885	1885	1870
Adj Flow Rate, veh/h	0	433	58	158	650	0				208	1592	175
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60				0.60	0.60	0.60
Percent Heavy Veh, %	0	2	2	1	1	0				1	1	2
Cap, veh/h	0	408	55	175	662	0				224	1697	184
Arrive On Green	0.00	0.25	0.25	0.06	0.35	0.00				0.57	0.57	0.57
Sat Flow, veh/h	0	1610	216	1795	1885	0				393	2971	323
Grp Volume(v), veh/h	0	0	491	158	650	0				988	0	988
Grp Sat Flow(s),veh/h/ln	0	0	1826	1795	1885	0				1866	0	1822
Q Serve(g_s), s	0.0	0.0	26.0	6.0	35.0	0.0				49.5	0.0	52.1
Cycle Q Clear(g_c), s	0.0	0.0	26.0	6.0	35.0	0.0				49.5	0.0	52.1
Prop In Lane	0.00		0.12	1.00		0.00				0.21		0.18
Lane Grp Cap(c), veh/h	0	0	463	175	662	0				1065	0	1040
V/C Ratio(X)	0.00	0.00	1.06	0.90	0.98	0.00				0.93	0.00	0.95
Avail Cap(c_a), veh/h	0	0	463	175	662	0				1146	0	1119
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	38.3	30.7	33.0	0.0				20.1	0.0	20.6
Incr Delay (d2), s/veh	0.0	0.0	58.9	40.3	30.4	0.0				11.8	0.0	15.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	19.0	4.8	21.1	0.0				23.0	0.0	24.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	97.1	71.0	63.3	0.0				31.8	0.0	35.9
LnGrp LOS			F	E	E					C		D
Approach Vol, veh/h	491			808			1975					
Approach Delay, s/veh	97.1			64.8			33.8					
Approach LOS	F			E			C					
Timer - Assigned Phs	2			4			7		8			
Phs Duration (G+Y+Rc), s	62.6			40.0			10.0		30.0			
Change Period (Y+Rc), s	4.0			4.0			4.0		4.0			
Max Green Setting (Gmax), s	63.0			36.0			6.0		26.0			
Max Q Clear Time (g_c+l1), s	54.1			37.0			8.0		28.0			
Green Ext Time (p_c), s	4.5			0.0			0.0		0.0			
Intersection Summary												
HCM 7th Control Delay, s/veh				51.0								
HCM 7th LOS				D								
Notes												
User approved pedestrian interval to be less than phase max green.												

Lanes, Volumes, Timings

Projected 2030 with Project Calibrated PHF

2: S Meridian & Pioneer Ave/Pioneer Way E

PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	275	35	95	410	0	0	0	0	125	955	110
Future Volume (vph)	0	275	35	95	410	0	0	0	0	125	955	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		658			588			688			670	
Travel Time (s)		17.9			16.0			18.8			18.3	
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		8		7	4						2	
Permitted Phases				4						2		
Detector Phase		8		7	4					2	2	
Switch Phase												
Minimum Initial (s)		5.0		5.0	5.0					10.0	10.0	
Minimum Split (s)		22.5		9.5	22.5					23.0	23.0	
Total Split (s)		30.0		10.0	40.0					67.0	67.0	
Total Split (%)		28.0%		9.3%	37.4%					62.6%	62.6%	
Maximum Green (s)		26.0		6.0	36.0					63.0	63.0	
Yellow Time (s)		3.0		3.0	3.0					3.0	3.0	
All-Red Time (s)		1.0		1.0	1.0					1.0	1.0	
Lost Time Adjust (s)		0.0		0.0	0.0						0.0	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag		Lag		Lead								
Lead-Lag Optimize?		Yes		Yes								
Vehicle Extension (s)		1.0		1.0	1.0					1.0	1.0	
Recall Mode		None		None	None					Min	Min	
Walk Time (s)		7.0			7.0					7.0	7.0	
Flash Don't Walk (s)		10.0			10.0					12.0	12.0	
Pedestrian Calls (#/hr)		3			6					16	16	

Intersection Summary

Area Type: Other

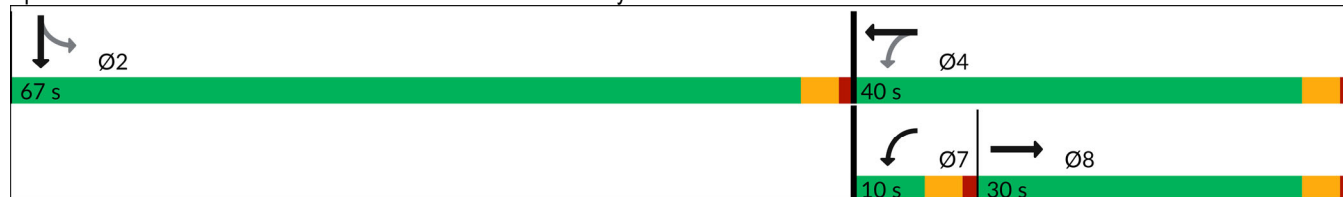
Cycle Length: 107

Actuated Cycle Length: 106.1

Natural Cycle: 120

Control Type: Actuated-Uncoordinated

Splits and Phases: 2: S Meridian & Pioneer Ave/Pioneer Way E



HCM 7th Signalized Intersection Summary 2: S Meridian & Pioneer Ave/Pioneer Way E

Projected 2030 with Project Calibrated PHF
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	275	35	95	410	0	0	0	0	125	955	110
Future Volume (veh/h)	0	275	35	95	410	0	0	0	0	125	955	110
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00				1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1870	1870	1885	1885	0				1885	1885	1870
Adj Flow Rate, veh/h	0	458	58	158	683	0				208	1592	183
Peak Hour Factor	0.60	0.60	0.60	0.60	0.60	0.60				0.60	0.60	0.60
Percent Heavy Veh, %	0	2	2	1	1	0				1	1	2
Cap, veh/h	0	408	52	174	657	0				225	1698	193
Arrive On Green	0.00	0.25	0.25	0.06	0.35	0.00				0.57	0.57	0.57
Sat Flow, veh/h	0	1623	205	1795	1885	0				391	2958	336
Grp Volume(v), veh/h	0	0	516	158	683	0				992	0	992
Grp Sat Flow(s),veh/h/ln	0	0	1828	1795	1885	0				1866	0	1819
Q Serve(g_s), s	0.0	0.0	26.0	6.0	36.0	0.0				49.9	0.0	52.7
Cycle Q Clear(g_c), s	0.0	0.0	26.0	6.0	36.0	0.0				49.9	0.0	52.7
Prop In Lane	0.00		0.11	1.00		0.00				0.21		0.18
Lane Grp Cap(c), veh/h	0	0	460	174	657	0				1071	0	1044
V/C Ratio(X)	0.00	0.00	1.12	0.91	1.04	0.00				0.93	0.00	0.95
Avail Cap(c_a), veh/h	0	0	460	174	657	0				1138	0	1109
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	38.7	31.2	33.7	0.0				20.0	0.0	20.6
Incr Delay (d2), s/veh	0.0	0.0	79.5	42.1	45.8	0.0				11.8	0.0	15.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	21.7	4.9	24.5	0.0				23.7	0.0	25.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	0.0	0.0	118.2	73.3	79.5	0.0				31.8	0.0	36.1
LnGrp LOS			F	E	F					C		D
Approach Vol, veh/h	516			841						1983		
Approach Delay, s/veh	118.2			78.3						33.9		
Approach LOS	F			E						C		
Timer - Assigned Phs	2			4			7		8			
Phs Duration (G+Y+Rc), s	63.3			40.0			10.0		30.0			
Change Period (Y+Rc), s	4.0			4.0			4.0		4.0			
Max Green Setting (Gmax), s	63.0			36.0			6.0		26.0			
Max Q Clear Time (g_c+l1), s	54.7			38.0			8.0		28.0			
Green Ext Time (p_c), s	4.6			0.0			0.0		0.0			
Intersection Summary												
HCM 7th Control Delay, s/veh				58.1								
HCM 7th LOS				E								
Notes												
User approved pedestrian interval to be less than phase max green.												