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Fort Pointe Planned Unit Development

Transportation Impact Analysis

Warrenton, Oregon

Date:

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Prepared for:

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RENEWS: 12/31/2023

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Executive Summary

1. The proposed Fort Pointe Planned Unit Development (PUD) will develop a site east of NW Ridge Road and south of Peter Iredale Road, in Warrenton, Oregon with a 210-unit apartment complex, 210 detached single-family homes, and 30 attached single-family. The project will be constructed over a period of eight years and is expected to be completed by the end of 2031.
2. Access to the site will be taken from three connections to NW Ridge Road. Two additional connections will be constructed for fire access: one emergency only connection will be at the north end of the site to connect with the access to the KOA Campground and the other emergency only will be at the south end of the site to connect with NW Ridge Road.
3. Trip generation for the Fort Pointe PUD is estimated at 244 morning peak hour, 325 evening peak hour, and 3,596 weekday trips when all phases are completed.
4. A review of the most recent five years of available crash data found that six of the study intersections have crash rates that exceed the 90th percentile rates identified by ODOT for similar types of intersections. However, no significant trends or crash patterns were identified that could be mitigated with safety improvements. At the other nine intersections, crash rates were below the 90th percentile rates and no significant trends or crash patterns were identified. Based on these findings, no safety mitigation is recommended per the crash data analysis.
5. All proposed site accesses are expected to have adequate sight lines; no mitigation pertaining to sight distance is required.
6. Based on the left-turn warrants evaluation, no mitigation to the study intersections is necessary or recommended as part of the Fort Pointe project.
7. Traffic signal warrants are not projected to be met at any of the unsignalized study intersections under year 2031 conditions; therefore, no new traffic signals are necessary or recommended as part of the proposed development application.
8. Based on the results of the operational analysis, all study intersections are currently operating acceptably per the agency standards and are projected to continue operating acceptably through the 2031 buildout year of the site. Accordingly, no operational mitigation is necessary or recommended at the study intersections.
9. In general, changes in 95th percentile queuing between the year 2031 background and buildout conditions are anticipated to be small, one vehicle or two vehicles. Although several of the 95th percentile queues are estimated to extend beyond available storage, the queues would be present under both background and buildout conditions. The proposed project will not measurably change any of these queues.

Project Description

Introduction

The proposed Fort Pointe Planned Unit Development (PUD) will develop a site east of NW Ridge Road and south of Peter Iredale Road, in Warrenton, Oregon with a 210-unit apartment complex, 210 detached single-family homes, and 30 attached single-family. The project will be constructed over a period of eight years and is expected to be completed by the end of 2031.

The report conducts safety and capacity/level of service analyses the following study area intersections:

1. Pacific Drive (OR 104) & Lake Drive
2. Peter Iredale Road & NW Ridge Road
3. North Site Access & NW Ridge Road
4. Central Site Access & NW Ridge Road
5. South Site Access & NW Ridge Road
6. SW 9th Street & NW Ridge Road
7. 18th Street & Delaura Beach Lane
8. NW Ridge Road & Delaura Beach Lane
9. E Harbor Drive (US 101B) & N Main Avenue (OR 104)
10. SW 9th Street & SW Cedar Drive
11. SW 9th Street & S Main Avenue (OR 104)
12. Fort Stevens Highway Spur (Alt 104S) & Main Street (OR 104)
13. SW 18th Street & Main Street (OR 104)
14. E Harbor Drive & US 101
15. SE Ensign Lane & Fort Stevens Highway (OR 104S)
16. SE Ensign Lane & US 101

The purpose of this study is to determine whether the transportation system within the vicinity of the site is capable of safely and efficiently supporting the existing and proposed uses, and to determine any mitigation that may be necessary to do so. Detailed information on traffic counts, trip generation calculations, safety analyses, and level of service calculations is included in the appendix to this report.

Location Description

The site is located east of NW Ridge Road on tax lot 810170001300 (approximately 269.81 acres) in Warrenton, Oregon. Access to the site will be taken from three connections to NW Ridge Road. Two additional connections will be constructed for fire access: one emergency only connection will be at the north end of the site to connect with the access to the KOA Campground and the other emergency only will be at the south end of the site to connect with NW Ridge Road. A vicinity map is shown in Figure 1 with the subject site outlined in yellow. A site plan is included in Appendix A.



Figure 1: Project Location and Access (© Google Earth)

Vicinity Streets

The study area includes roadways under state, county, and city jurisdiction that are expected to be impacted by the proposed development. Table 1 describes each of the vicinity roadways.

Table 1: Vicinity Roadway Descriptions

Street Name	Functional Classification ¹	Travel Lanes ²	Speed (mph)	Curbs & Sidewalks	On-Street Parking	Bicycle Facilities
Jurisdiction: ODOT						
US 101	Statewide Highway Principal Arterial (City)	2-5	45-55	None	Prohibited	Partial
OR 104 (Pacific Drive, S Main Street)	District Highway Major Collector (City)	2	25-45	Partial	Partially Permitted	Partial
OR 104S (Fort Stevens Highway Spur)	District Highway Major Collector (City)	2	45	None	Partially Permitted	Both
US 101B (E Harbor Drive)	District Highway Major Collector (City)	2	25-45	Partial	Prohibited	Both

Table 1: Vicinity Roadway Descriptions

Street Name	Functional Classification ¹	Travel Lanes ²	Speed (mph)	Curbs & Sidewalks	On-Street Parking	Bicycle Facilities
Jurisdiction: Oregon State Parks						
Peter Iredale Road	Local Access (City)	2	25	None	Prohibited	Partial
Jurisdiction: Clatsop County ³						
Lake Drive	Major Collector Major Collector (City)	2	45	None	Prohibited	Both
NW Ridge Road	Major Collector Major Collector (City)	2	45	None	Prohibited	Both
Delaura Beach Lane East of Ridge Road	Major Collector Minor Collector (City)	2	45	None	Prohibited	Partial
SW 18th Street	Major Collector Minor Collector (City)	2	45	None	Prohibited	Partial
Jurisdiction: City of Warrenton ³						
SE Ensign Lane	Minor Arterial	2	25	Partial	Prohibited	Both
E Harbor Drive	Major Collector	2-3	25-45	Partial	Prohibited	Partial Shoulders
Delaura Beach Lane West of Ridge Road	Minor Collector	2	45	None	Prohibited	Partial
SW 9 th Street	Minor Collector	2	25	Partial North Side	Partially Permitted	None
SW Cedar Avenue	Local Access	2	25	Partial	Permitted	None
NE Skipanon Drive	Local Access	2	25	None	Partially Permitted	None

Notes:

1. Functional classification based on Oregon Highway Plan, Clatsop County Transportation System Plan, and Warrenton Transportation System Plan.
2. Number of travel lanes excludes turn lanes.
3. County and City jurisdiction identified based on Clatsop County Webmaps.

Study Intersections

Based on coordination with agency staff, 13 existing intersections and three future intersections were identified for analysis. A summarized description of the study intersections is provided in Table 2.










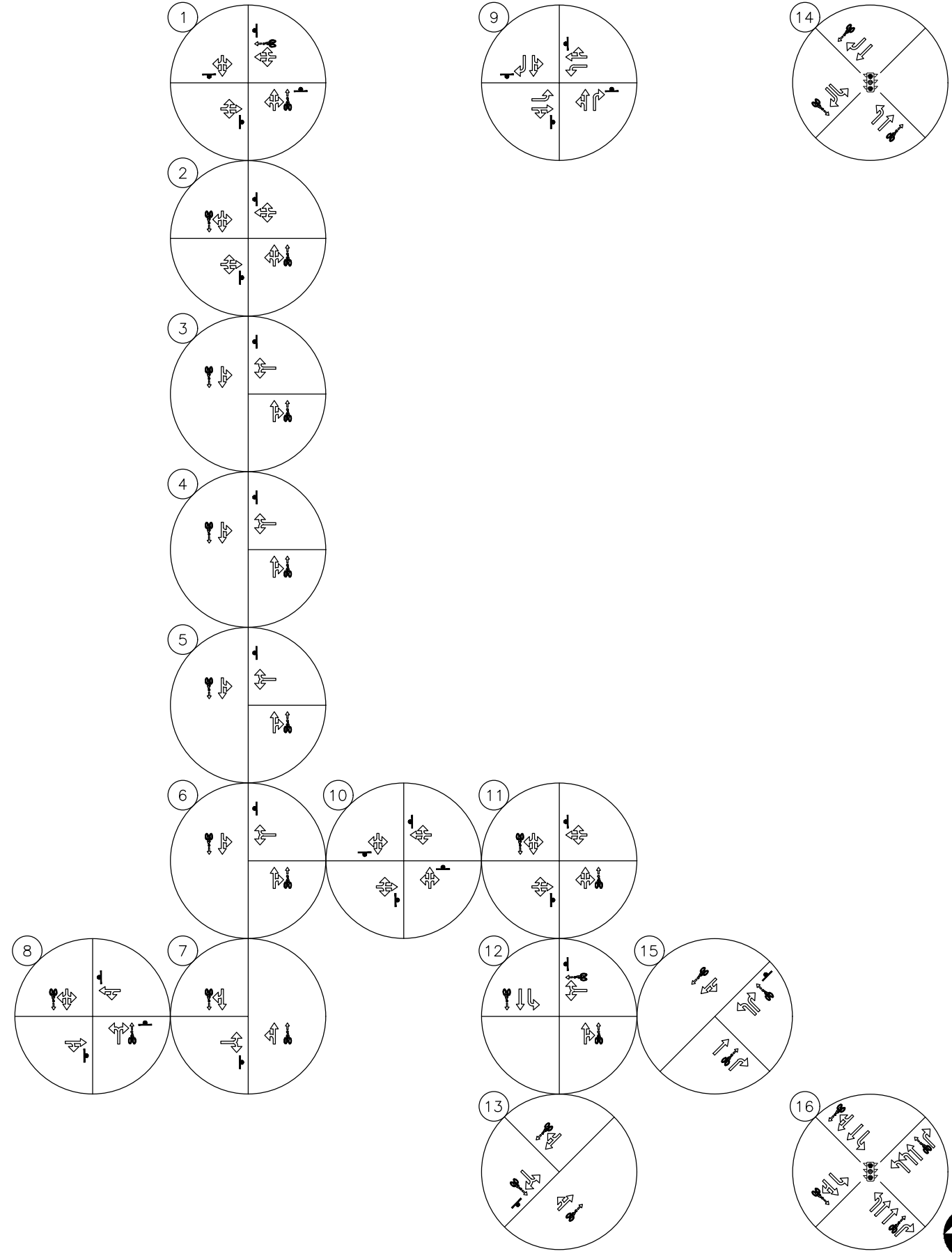
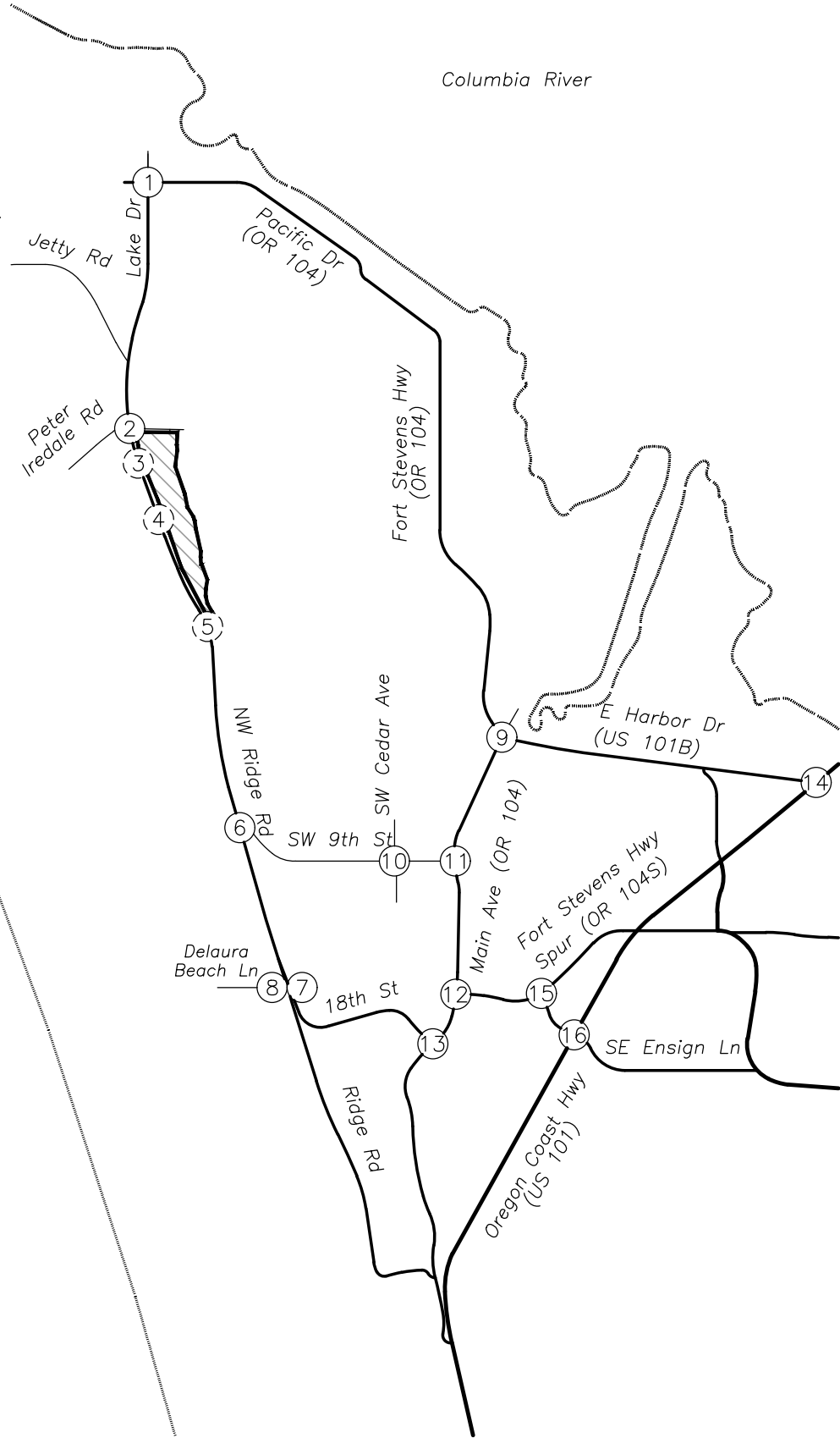
Table 2: Study Intersection Descriptions

	Intersection	Geometry	Traffic Control	Phasing/Stopped Approaches
1	Pacific Drive (OR 104) & Lake Drive	Four Legs	Stop-Controlled	All-Way Stop
2	Peter Iredale Road & NW Ridge Road	Four Legs	Stop-Controlled	EB/WB Stop
3	North Site Access & NW Ridge Road	Three Legs	Stop-Controlled	WB Stop
4	Central Site Access & NW Ridge Road	Three Legs	Stop-Controlled	WB Stop
5	South Site Access & NW Ridge Road	Three Legs	Stop-Controlled	WB Stop
6	SW 9 th Street & NW Ridge Road	Three Legs	Stop-Controlled	WB Stop
7	18 th Street & Delaura Beach Lane	Three Legs	Stop-Controlled	EB Stop
8	NW Ridge Road & Delaura Beach Lane	Four Legs	Stop-Controlled	EB/WB Stop
9	E Harbor Drive (US 101B) & N Main Avenue (OR 104)	Four Legs	Stop-Controlled	All-Way Stop
10	SW 9 th Street & SW Cedar Drive	Four Legs	Stop-Controlled	All-Way Stop
11	SW 9 th Street & S Main Avenue (OR 104)	Four Legs	Stop-Controlled	EB/WB Stop
12	Fort Stevens Highway Spur (OR 104S) & Main Street (OR 104)	Three Legs	Stop-Controlled	WB Stop
13	SW 18 th Street & Main Street (OR 104)	Three Legs	Stop-Controlled	EB Stop
14	E Harbor Drive & US 101	Three Legs	Signalized	Protected NB Left Overlap SB Right
15	SE Ensign Lane & Fort Stevens Highway (OR 104S)	Three Legs	Stop-Controlled	NB Stop
16	SE Ensign Lane & US 101	Four Legs	Signalized	Protected Left-turns Overlaps WB/NB Right-turns

A vicinity map showing the project site, vicinity streets, and study intersection configurations is shown in Figure 2.

LEGEND

-  STUDY INTERSECTION (EXISTING)
-  STUDY INTERSECTION (PROPOSED)
-  STOP SIGN
-  TRAFFIC SIGNAL
-  BIKE LANE
-  PROJECT SITE
-  ARTERIAL ROADWAY
-  COLLECTOR ROADWAY
-  LOCAL ROADWAY



No Scale



VICINITY MAP

Transit

The Sunset Empire Transit District operates two transit lines that travel through Clatsop County: 101: Astoria-Seaside-Cannon Beach and PC: Pacific Connector. Both routes connect the communities of Astoria, Warrenton, Gearhart, Seaside, and Cannon Beach with stops in Warrenton at the Fred Meyer Store on SE Neptune Drive and at the intersection of US 101 and SE Ensign Lane. The 101 route runs on weekdays with four trips each weekday in each direction. The PC route runs on weekends with five trips per day in each direction.

These routes are part of the NWCONNECTOR system, which is an alliance of transit agencies that connect and coordinate transit services in northwest Oregon. Clatsop, Tillamook, Columbia, Lincoln, and Benton Counties are all part of the alliance. Together, they provide connections up and down the coast and between the coast and several cities in the Willamette Valley.

POINT, an intercity bus service funded by ODOT's Public Transportation Division, operates the Northwest (Portland-Astoria) route with stops in Portland, Beaverton, Hillsboro, Cannon Beach, Seaside, Gearhart, Warrenton, and Astoria. Currently, it operates with two trips per day in each direction. POINT uses the same stops in Warrenton as the Sunset Empire Transit District.



Site Trips

Trip Generation

The proposed Fort Pointe PUD project will include the construction of a 210-unit apartment complex, 210 detached single-family homes, and 30 attached single-family homes. To estimate the number of trips that will be generated by the proposed housing development, trip equations from the *Trip Generation Manual*¹ were used. Fitted Curve Equations for land use code 210, *Single Family Detached Housing*, 215, *Single-Family Attached Housing*, and 220, *Multifamily Housing (Low-Rise)* were used to estimate the proposed site's trip generation based on the number of dwelling units (DU).

As shown in Table 3, the proposed Fort Pointe PUD is estimated to generate 244 morning peak hour trips, 325 evening peak hour trips, and 3,596 weekday trips when all phases are completed. Detailed trip generation calculations are included in Appendix A.

Table 3: Trip Generation Summary

ITE Code	Intensity (DU)	Morning Peak Hour			Evening Peak Hour			Daily Trips
		In	Out	Total	In	Out	Total	
210 - Single-Family Detached Housing	210 DU	37	109	146	126	74	200	1,996
215 - Single-Family Attached Housing	30 DU	3	7	10	8	6	14	178
220 – Multifamily Housing (Low-Rise)	210 DU	21	67	88	70	41	111	1,422
TOTAL	219	61	183	244	204	121	325	3,596

Trip Distribution

The directional distribution of site trips to and from the project site was estimated based on the locations of likely trip destinations and locations of major transportation facilities in the site vicinity. The following trip distribution was used for analysis:

- Approximately 45 percent of site trips will travel to/from the north along US 101
 - Approximately 20 percent via Pacific Drive (OR 104) and E Harbor Drive (partially US 101B)
 - Approximately 25 percent via S 9th Street, N Main Avenue, and E Harbor Drive partially (US 101B)
- Approximately 20 percent of site trips will travel to/from the east along SE Ensign Lane
- Approximately 15 percent of site trips will travel to/from the south along US 101
- Approximately 5 percent of site trips will travel to/from the north along Lake Drive

¹ Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 11th Edition, 2021.

- Approximately 15 percent of site trips will travel to/from locales within the immediate site vicinity

The trips are anticipated to use the three site accesses based on the location of the housing served by the accesses. The multifamily and attached housing will primarily use the north access while the detached housing is anticipated to primarily use the central and south accesses. The resulting distribution is estimated to be approximately 40 percent at the north access and 30 percent at each of the other accesses.

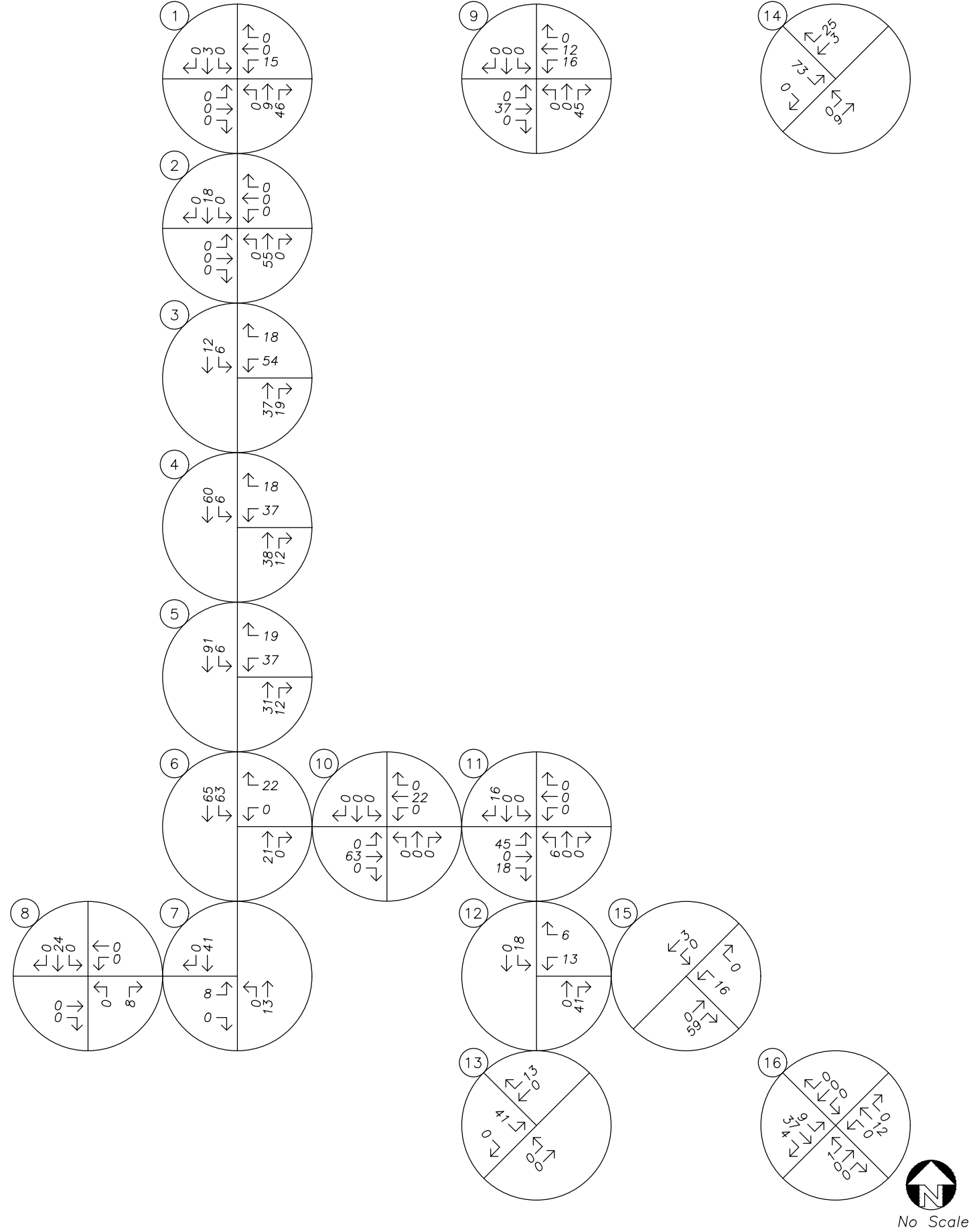
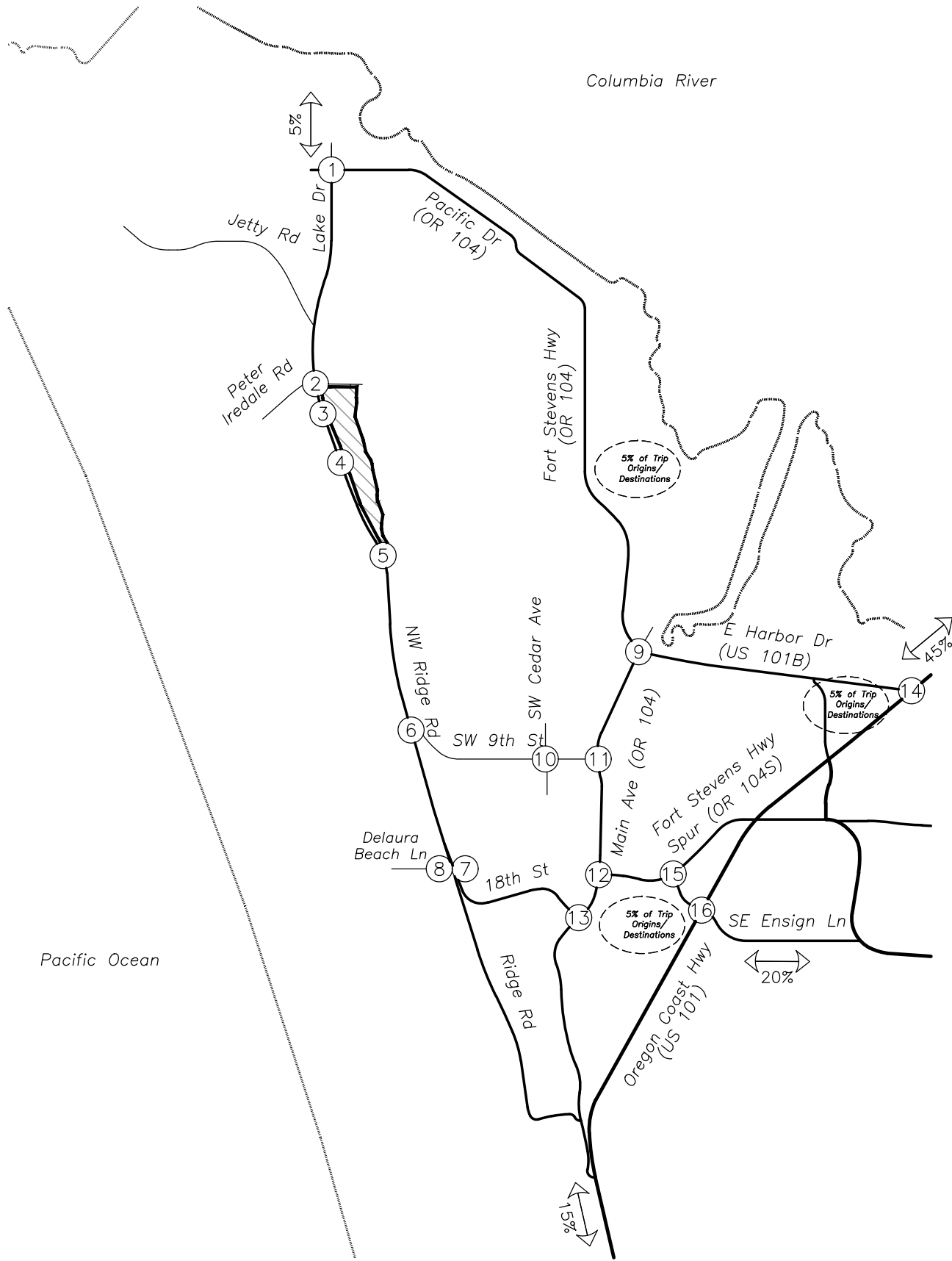
Trip Assignment

The trip distribution and assignment for the site trips generated during the morning and evening peak hours are shown in Figure 3 and Figure 4, respectively.

LEGEND

XX% PERCENT OF PROJECT TRIPS

NET NEW TRIP GENERATION			
	IN	OUT	TOTAL
AM	61	183	244



SITE TRIP DISTRIBUTION & ASSIGNMENT

Proposed Development Plan - Site Trips

AM Peak Hour

Figure 3

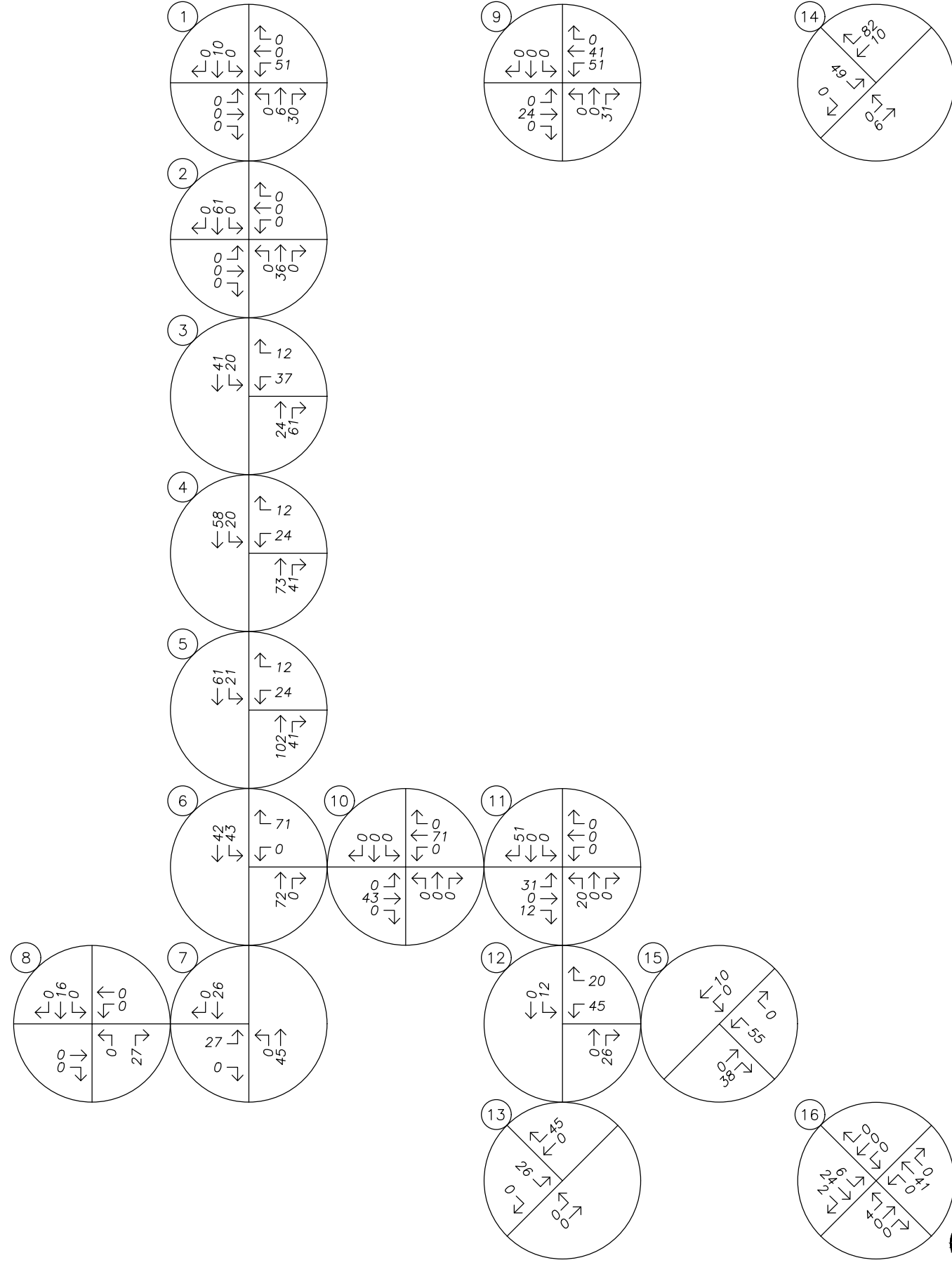
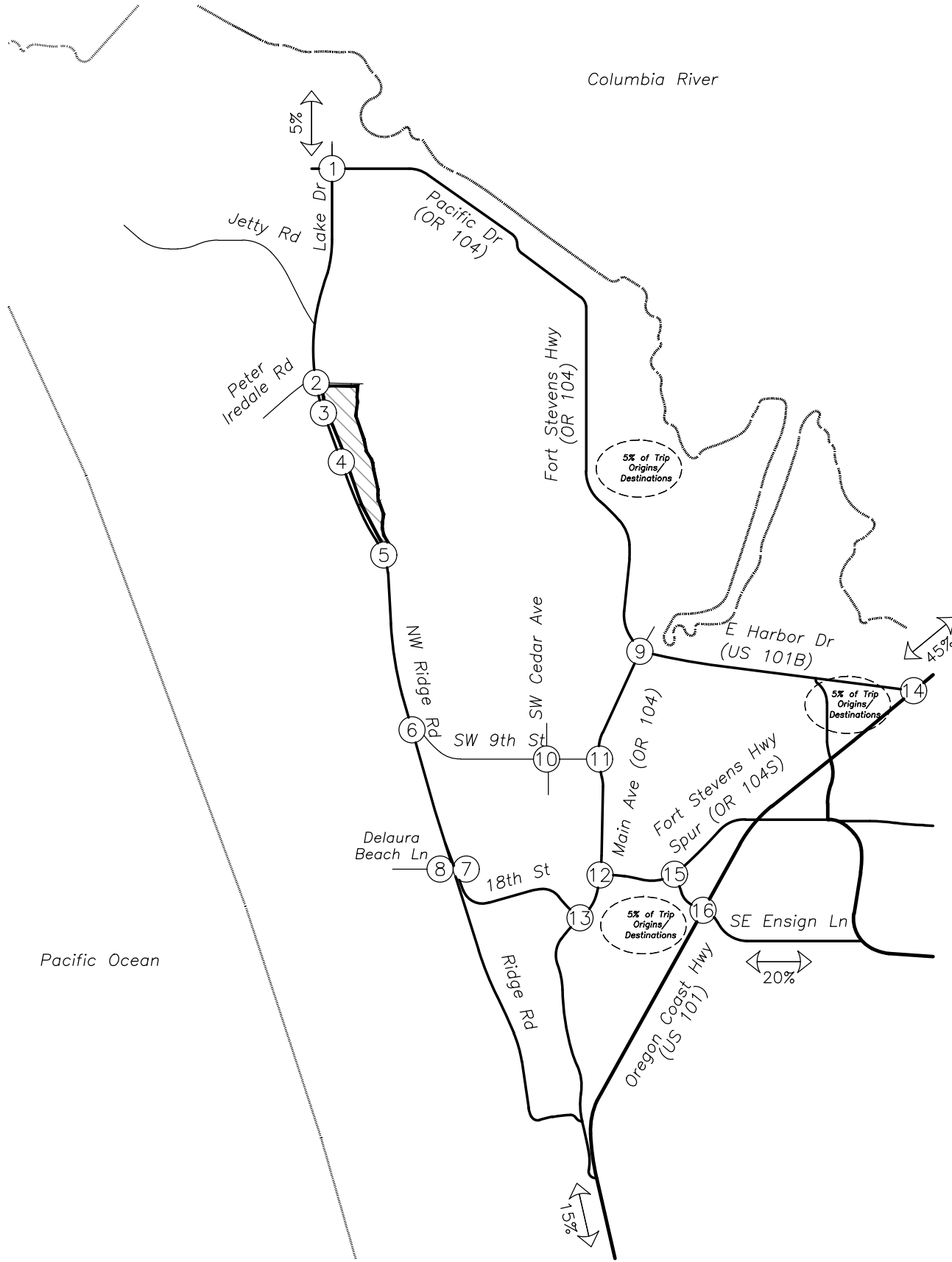
Fort Pointe Planned Unit Development

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LEGEND

XX% PERCENT OF PROJECT TRIPS

NET NEW TRIP GENERATION			
	IN	OUT	TOTAL
PM	204	121	325



No Scale



SITE TRIP DISTRIBUTION & ASSIGNMENT

Proposed Development Plan - Site Trips

PM Peak Hour

Figure 4

Fort Pointe Planned Unit Development

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Traffic Volumes

Existing Conditions

Traffic counts were conducted at all the study intersections on Tuesday, July 18, 2023, from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM, which correspond to the peak periods of activity anticipated for the housing in the proposed development. Data was used from each intersection's respective morning and evening peak hours. Traffic count data is included in Appendix B.

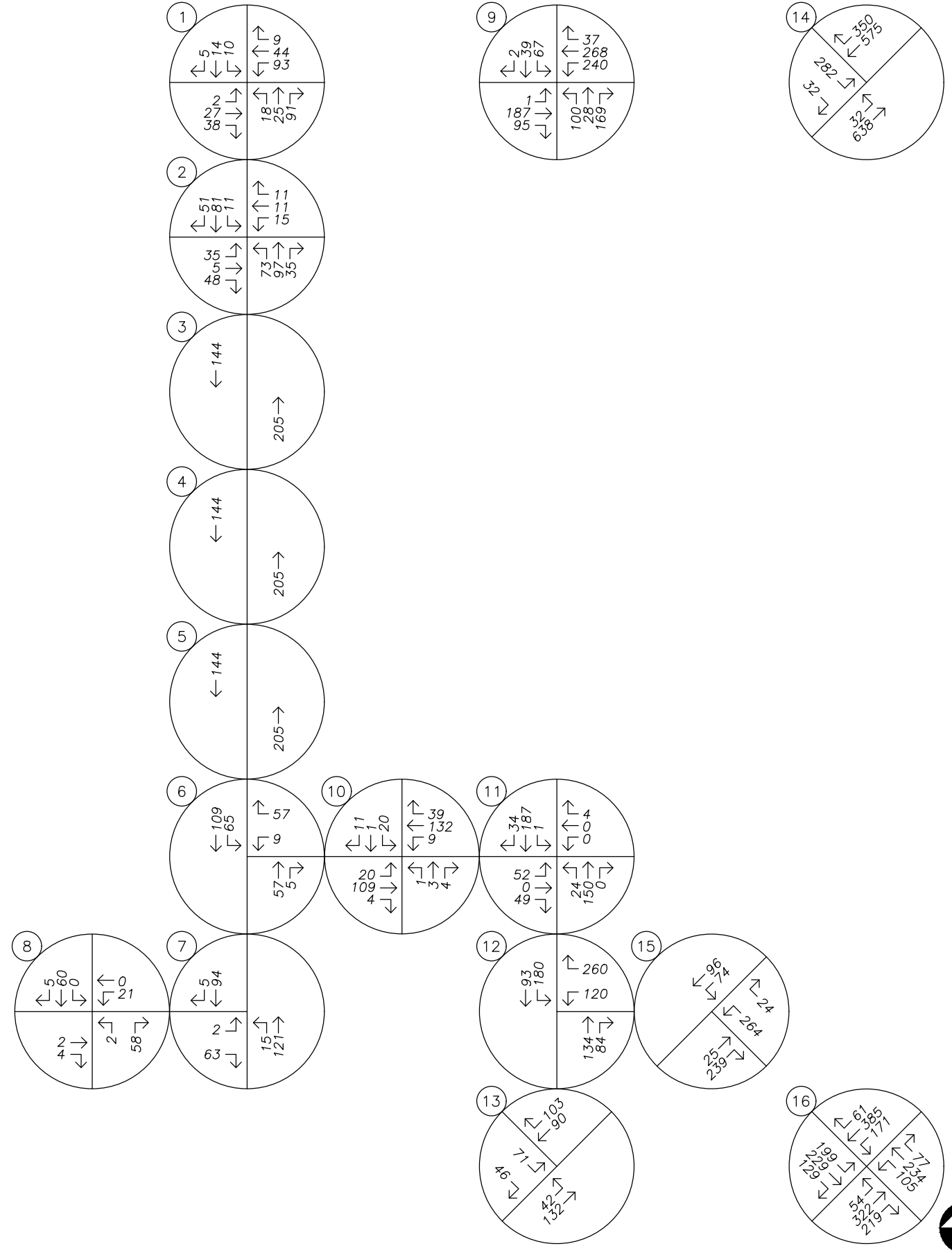
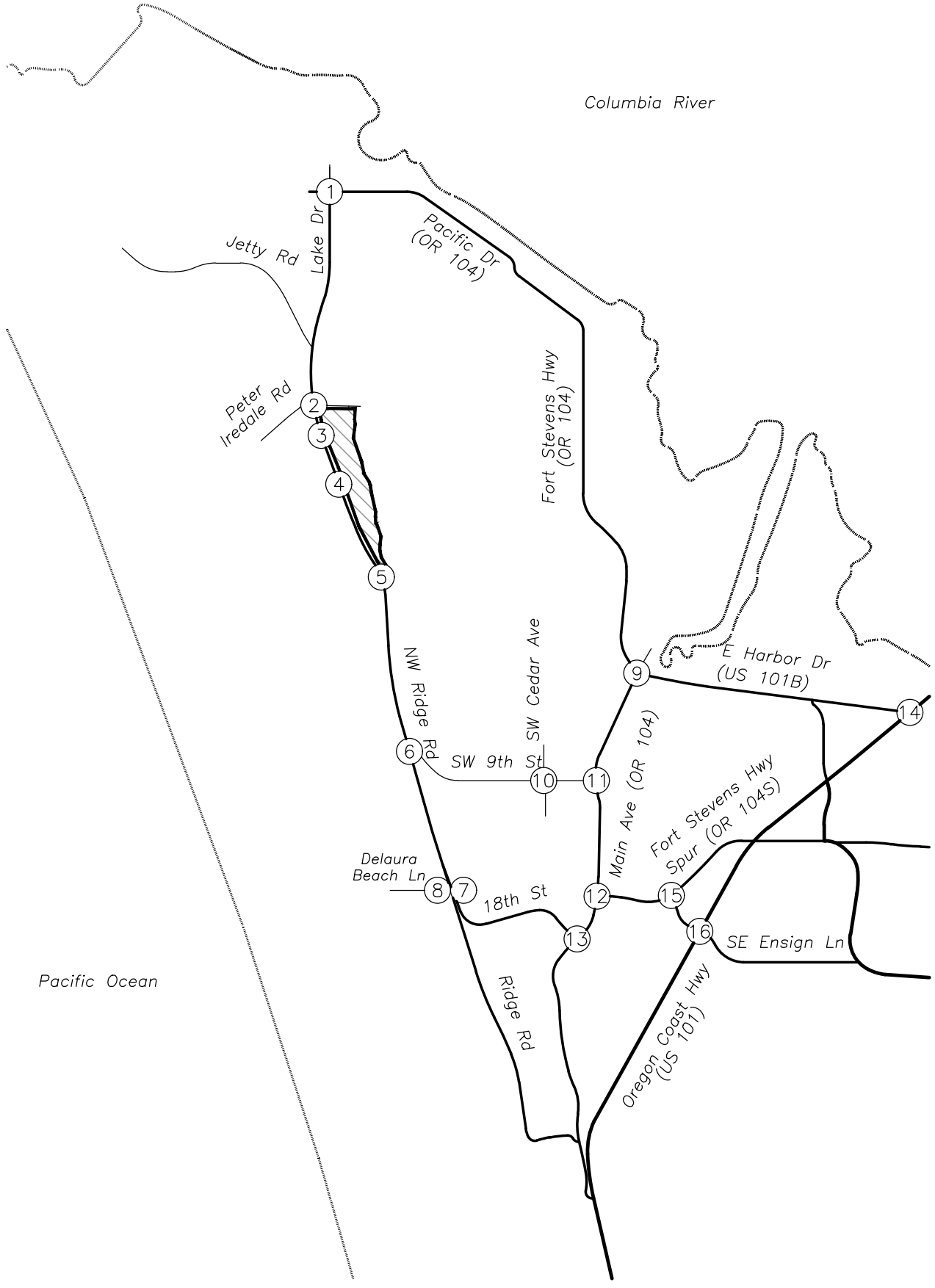
Seasonal Adjustments

Volumes on the state highways, OR 104 and OR 104S were seasonally adjusted to represent the 30th highest hour following the procedures in ODOT's *Analysis Procedures Manual (APM)*. Utilizing the average of the Summer and Commuter trend data from ODOT's Seasonal Trend Table, a seasonal adjustment factor of 1.003 was calculated. The seasonal adjustment factor was applied to the existing year morning and evening peak hour volumes along the OR 104 and OR 104S.

Volumes on US 101 were adjusted to an annual average daily traffic (AADT) condition following the procedures in *Alternative Mobility Targets for US 101 in Warrenton, Oregon*, which was adopted as an appendix to the Oregon Highway Plan. The ATR method was used with data from ATR Stations 04-001 and 04-004 for the years 2017 through 2022 except for year 2020. The ATR trends for the year 2020 show a different seasonal pattern than in prior years. This approach provides a factor of 0.809. The factor was applied to both the through movements and turning movements as the traffic on US 101, E Harbor Drive, and SE Ensign Lane is likely to fluctuate seasonally as well as the through highway traffic.

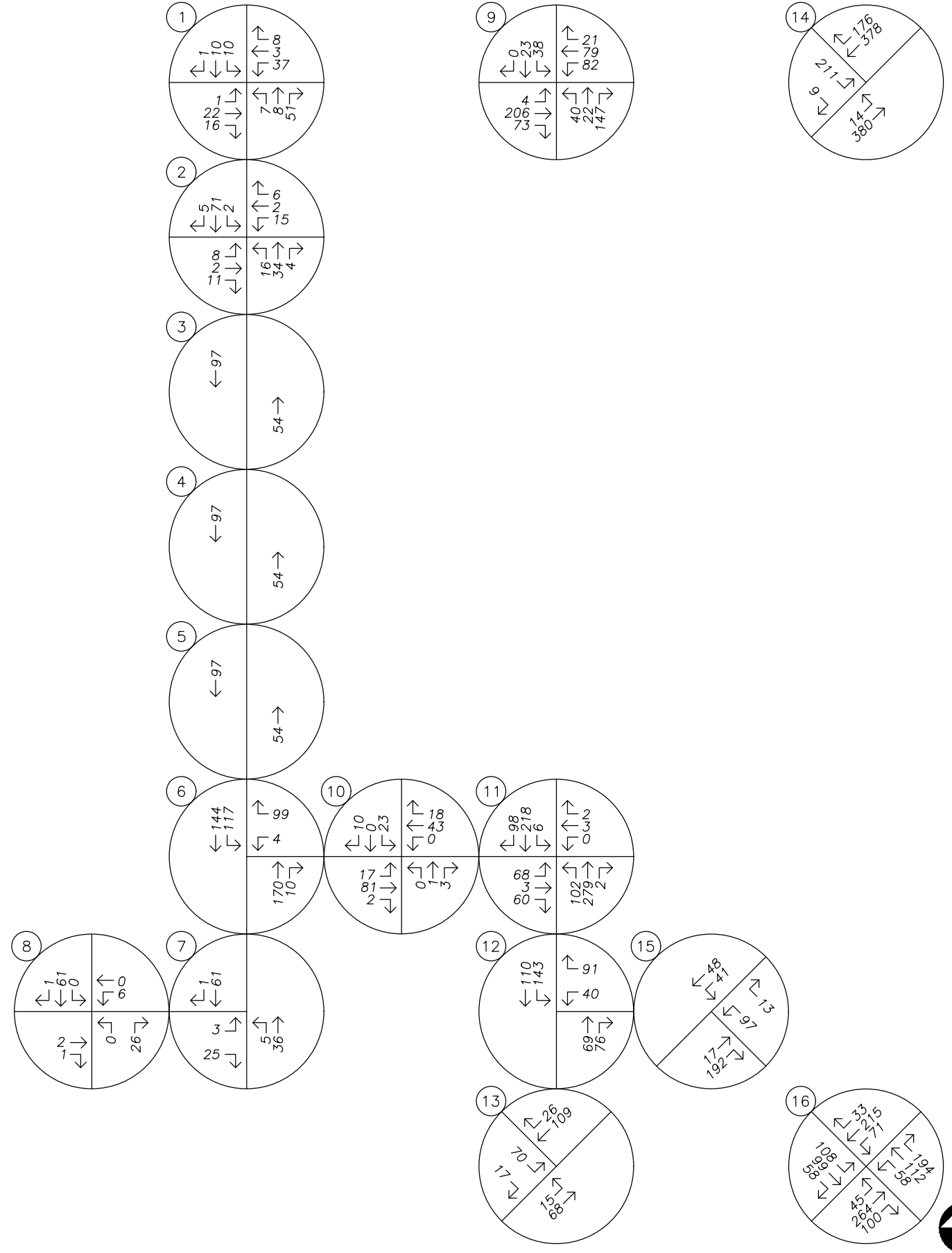
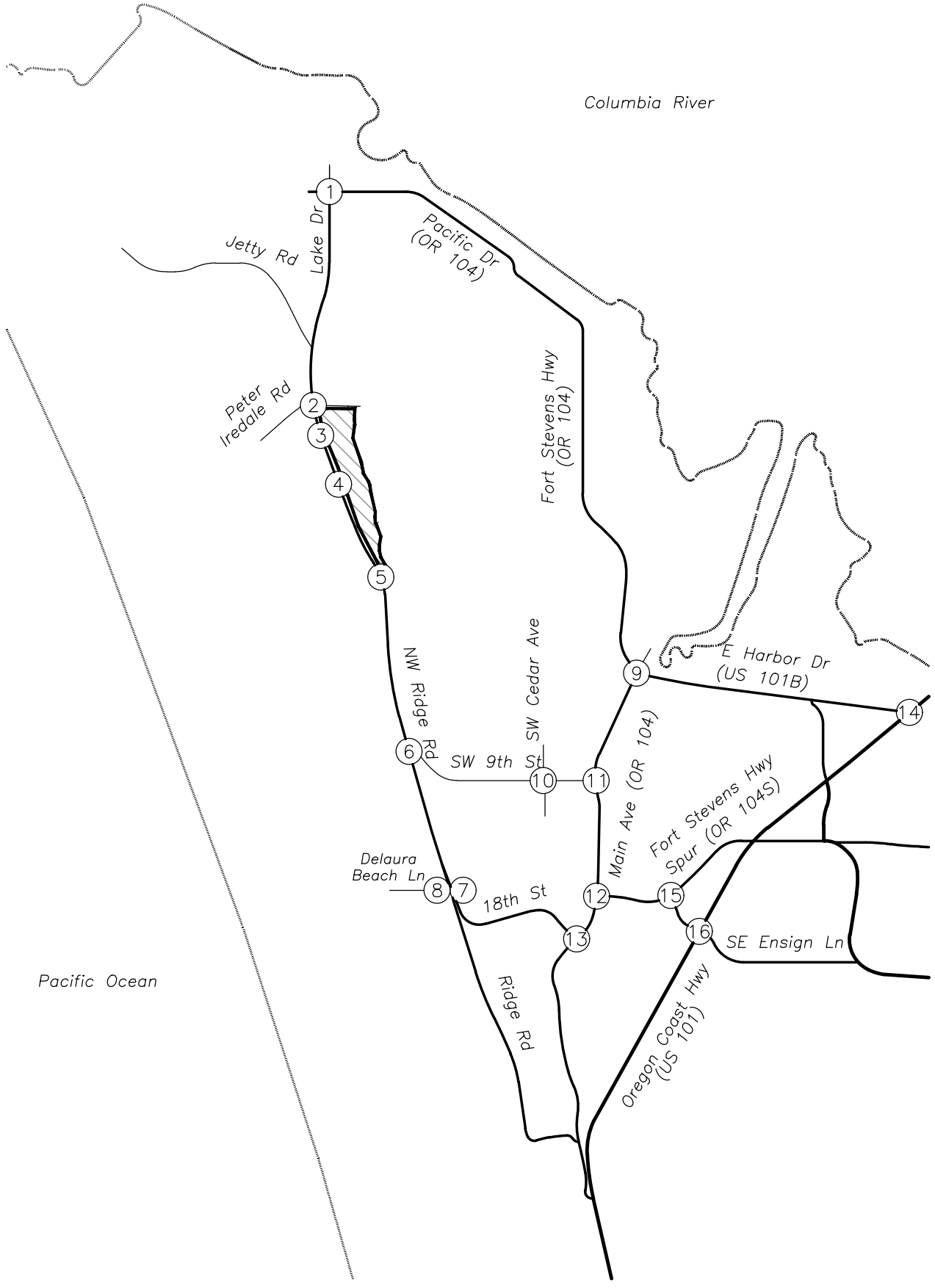
Traffic Volumes

The year 2023 existing traffic volumes for the morning and evening peak hours are shown in Figure 5 and Figure 6, respectively.



TRAFFIC VOLUMES
 Year 2023 Existing Conditions
 AM Peak Hour

Figure 5
 Fort Pointe Planned Unit Development
 8/16/2023



No Scale



TRAFFIC VOLUMES
Year 2023 Existing Conditions
PM Peak Hour

Figure 6
Fort Pointe Planned Unit Development
8/16/2023

Background Conditions

To provide an analysis of the impact of the proposed development on the nearby transportation facilities, an estimate of future traffic volumes is required. It is expected that the proposed development will be constructed and in operation by the year 2031. To approximate the future year 2031 traffic volumes at the study intersections, the following linear growth rates, as calculated per ODOT's Future 2041 Volumes Table and Warrenton Transportation System Plan (TSP), were applied to the adjusted year 2023 traffic volumes at the applicable study intersections over an eight-year period. The resulting calculations are shown in Table 4.

Table 4: Signal Warrant Evaluation Summary

	Intersection	Jurisdiction	Applied Growth Rate
1	Pacific Drive (OR 104) & Lake Drive	ODOT	1.00% *
2	Peter Iredale Rd & NW Ridge Rd	Warrenton	3.30%
3	North Site Access & NW Ridge Road	Warrenton	3.30%
4	Main Site Access & NW Ridge Road	Warrenton	3.30%
5	South Site Access & NW Ridge Road	Warrenton	3.30%
6	SW 9 th Street & NW Ridge Road	Warrenton	3.30%
7	18 th Street & Delaura Beach Lane	Warrenton	3.30%
8	NW Ridge Rd & Delaura Beach Ln	Warrenton	3.30%
9	E Harbor Dr (US 101B) & N Main Ave (OR 104)	ODOT	1.00% *
10	SW 9 th Street & SW Cedar Drive	Warrenton	3.30%
11	SW 9 th St & S Main Ave (OR 104)	ODOT	1.09%
12	Fort Stevens Hwy (OR 104S) & Main St (OR 104)	ODOT	1.09%
13	SW 18 th St & Main St (OR 104)	ODOT	1.00% *
14	E Harbor Dr & US 101	ODOT	1.03%
15	SE Ensign Ln & Fort Stevens Hwy (OR 104S)	ODOT	1.09%
16	SE Ensign Ln & US 101	ODOT	1.20%

* The calculated annual growth rate at these locations ranged from 0.09 percent to 0.33 percent; however, a 1.00 percent per year was conservatively applied to reflect growth rates similar to other segments of highway.

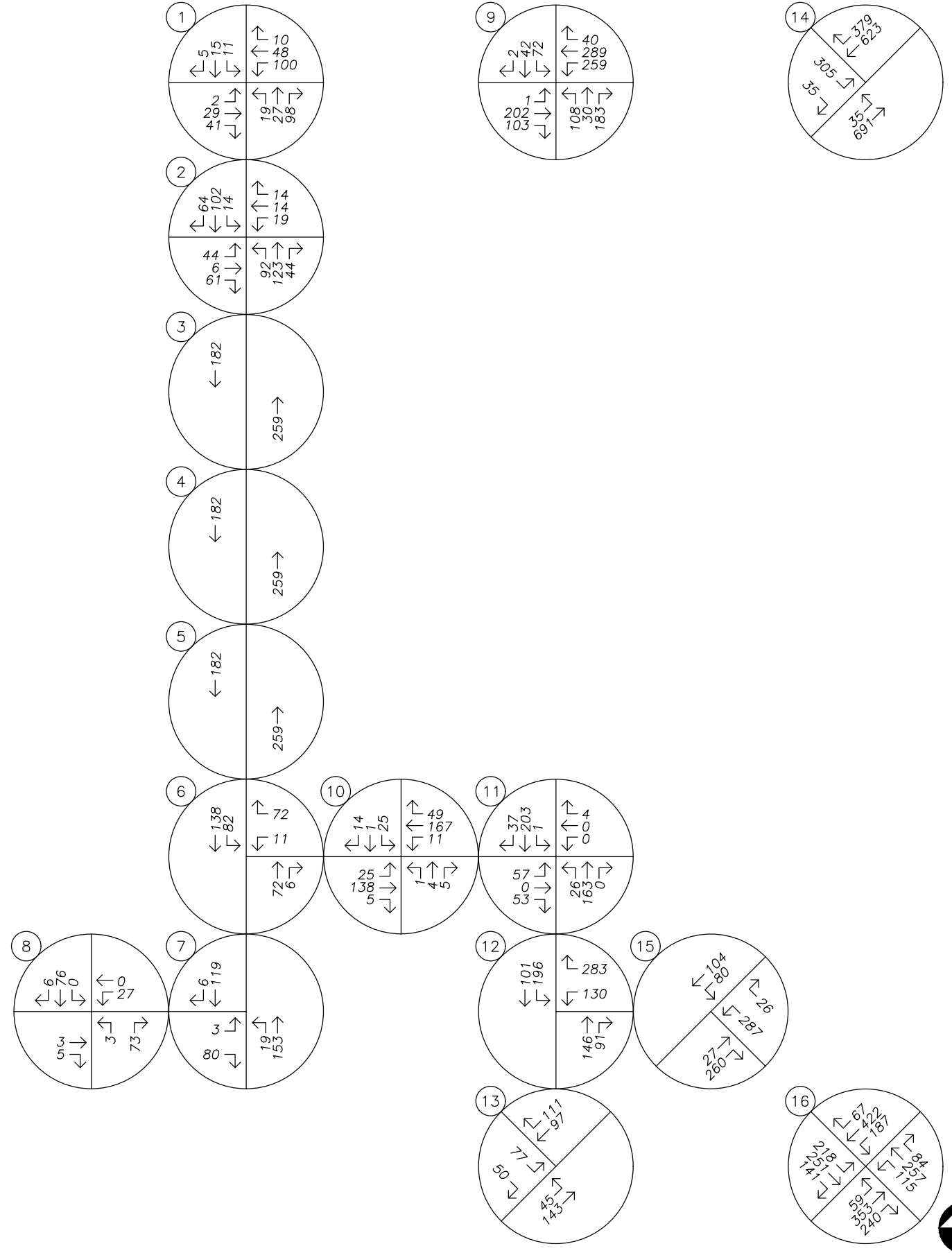
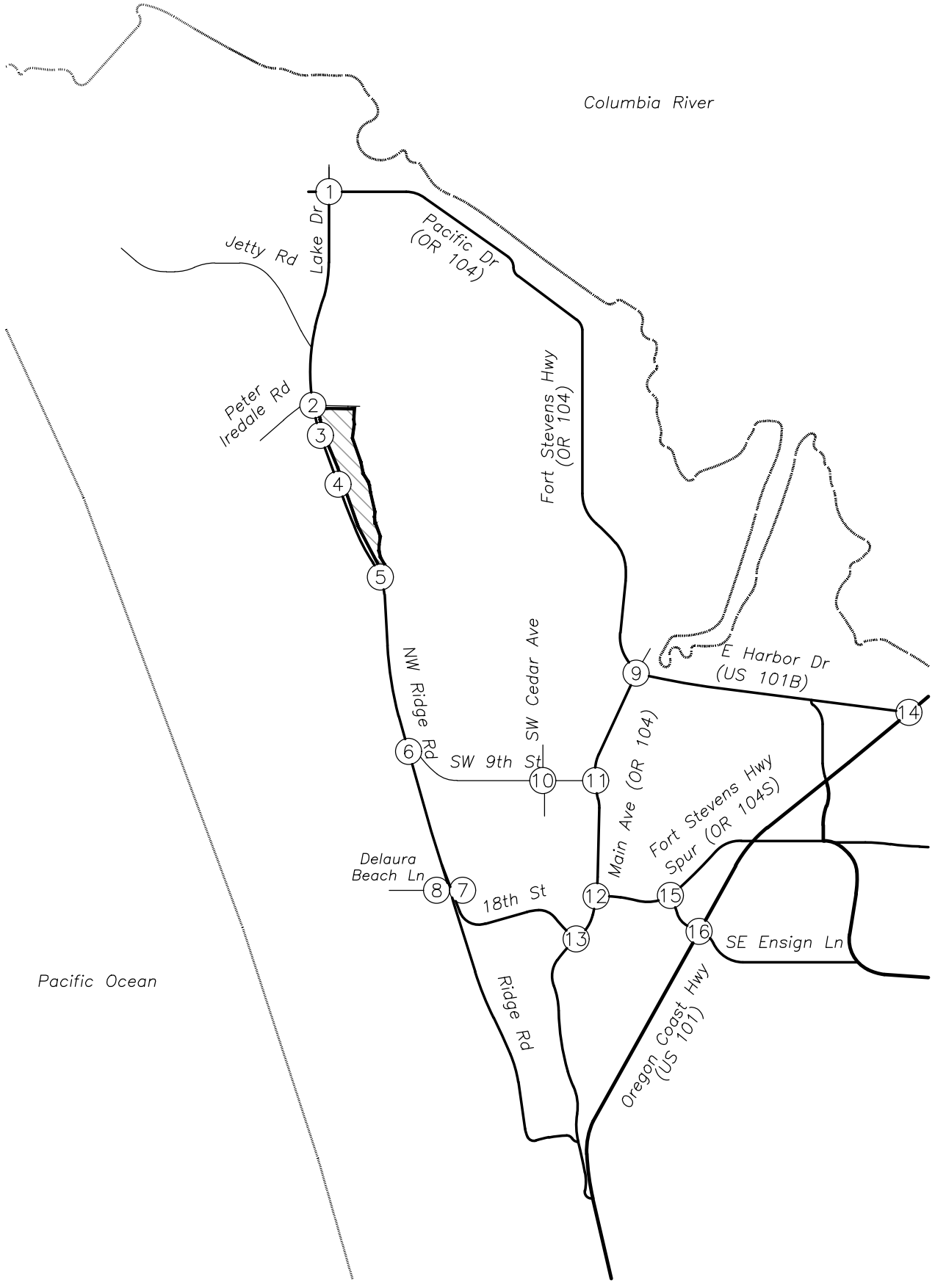
According to agency staff, no in-process development projects of significant size are expected to impact the study intersections prior to the development of the proposed Fort Pointe project. Therefore, no traffic generated by in-process developments were included in the traffic forecasts.

Figure 7 and Figure 8 presents the year 2031 background volumes for the morning and evening peak hours.

Buildout Conditions

Peak hour trips calculated to be generated by the proposed development, as described earlier within the *Site Trips* section, were added to the background volumes to estimate the buildout volumes.

Figure 9 and Figure 10 present the year 2031 buildout volumes for the morning and evening peak hours, respectively.

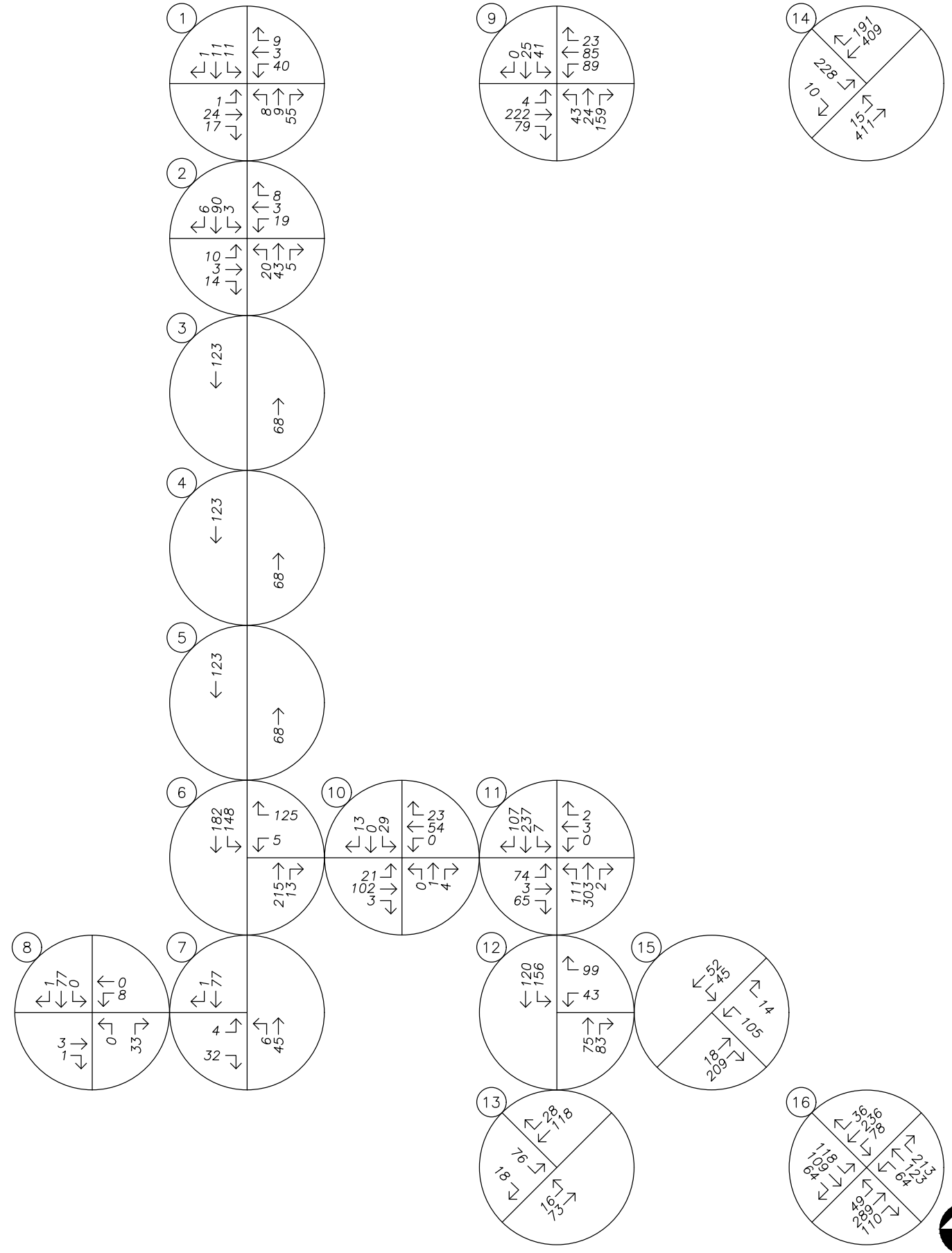
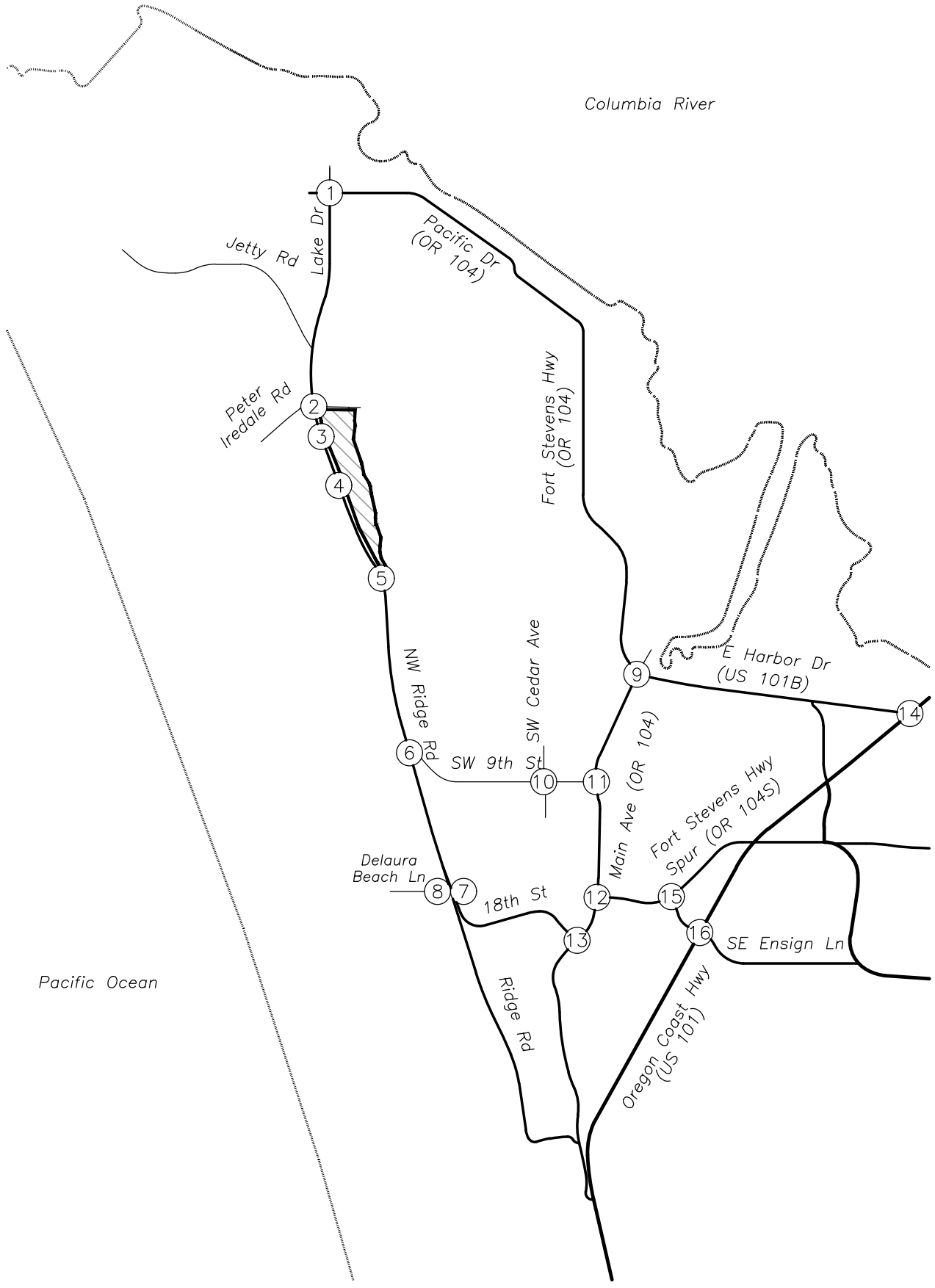


No Scale



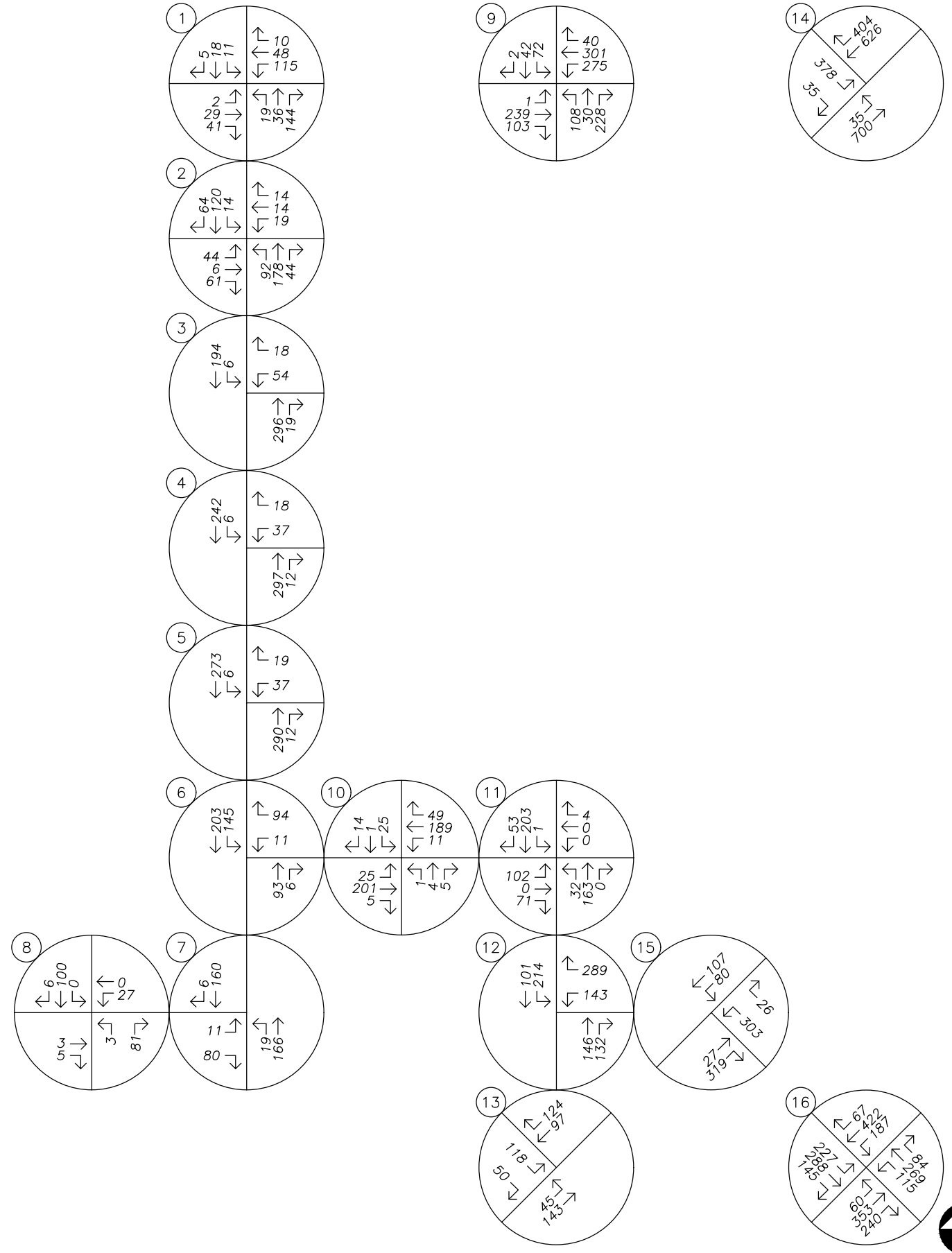
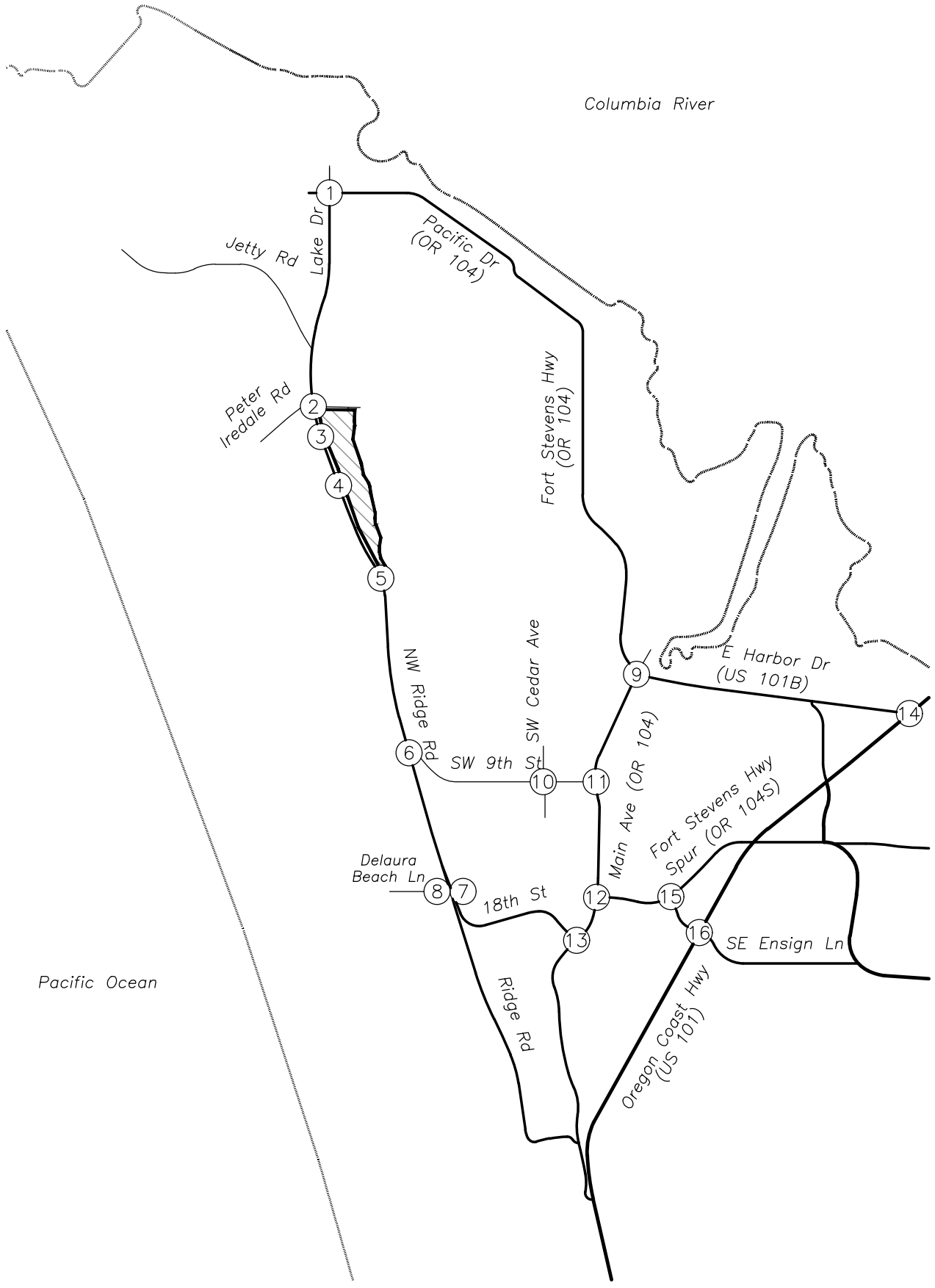
TRAFFIC VOLUMES
 Year 2031 Background Conditions
 AM Peak Hour

Figure 7
 Fort Pointe Planned Unit Development
 8/16/2023



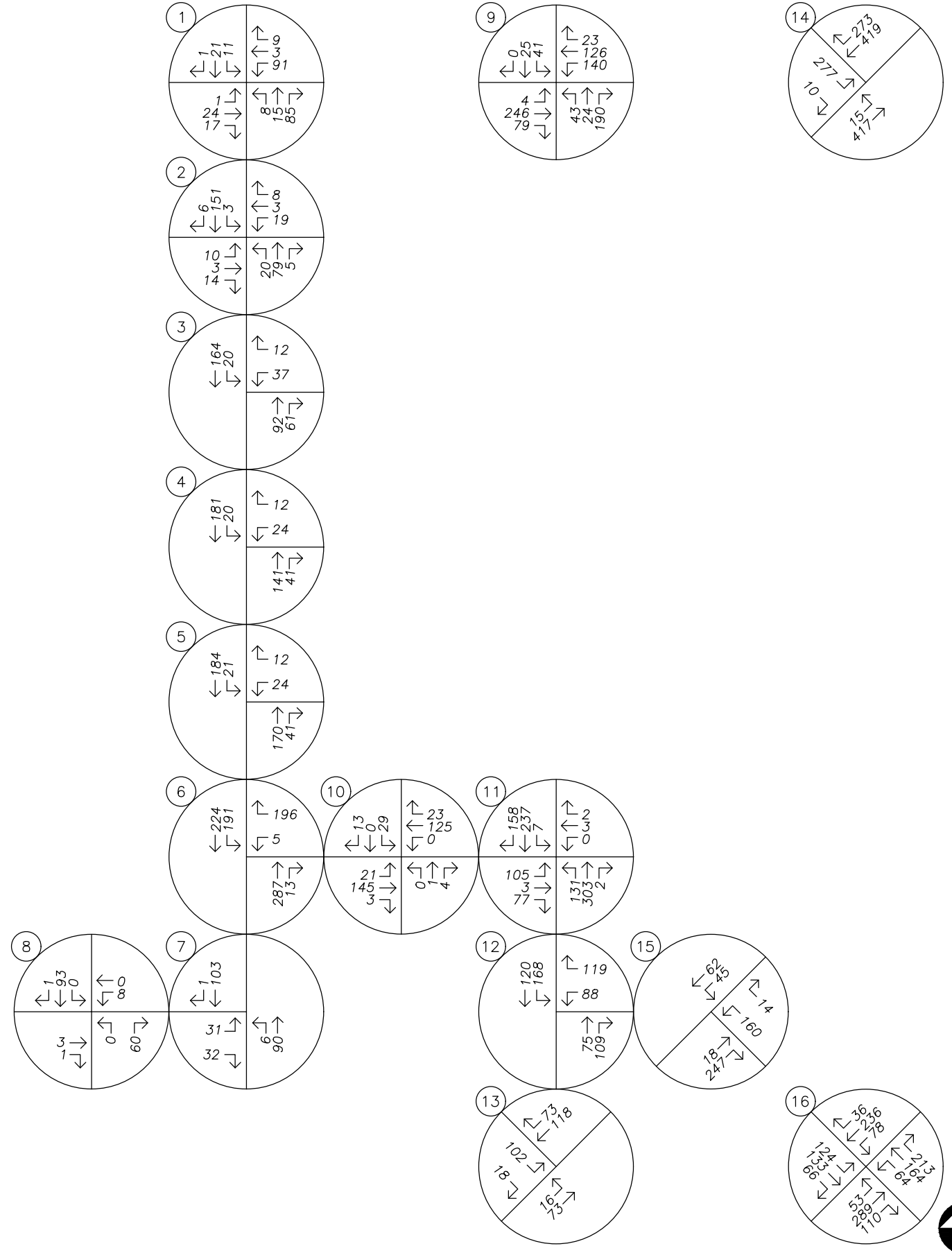
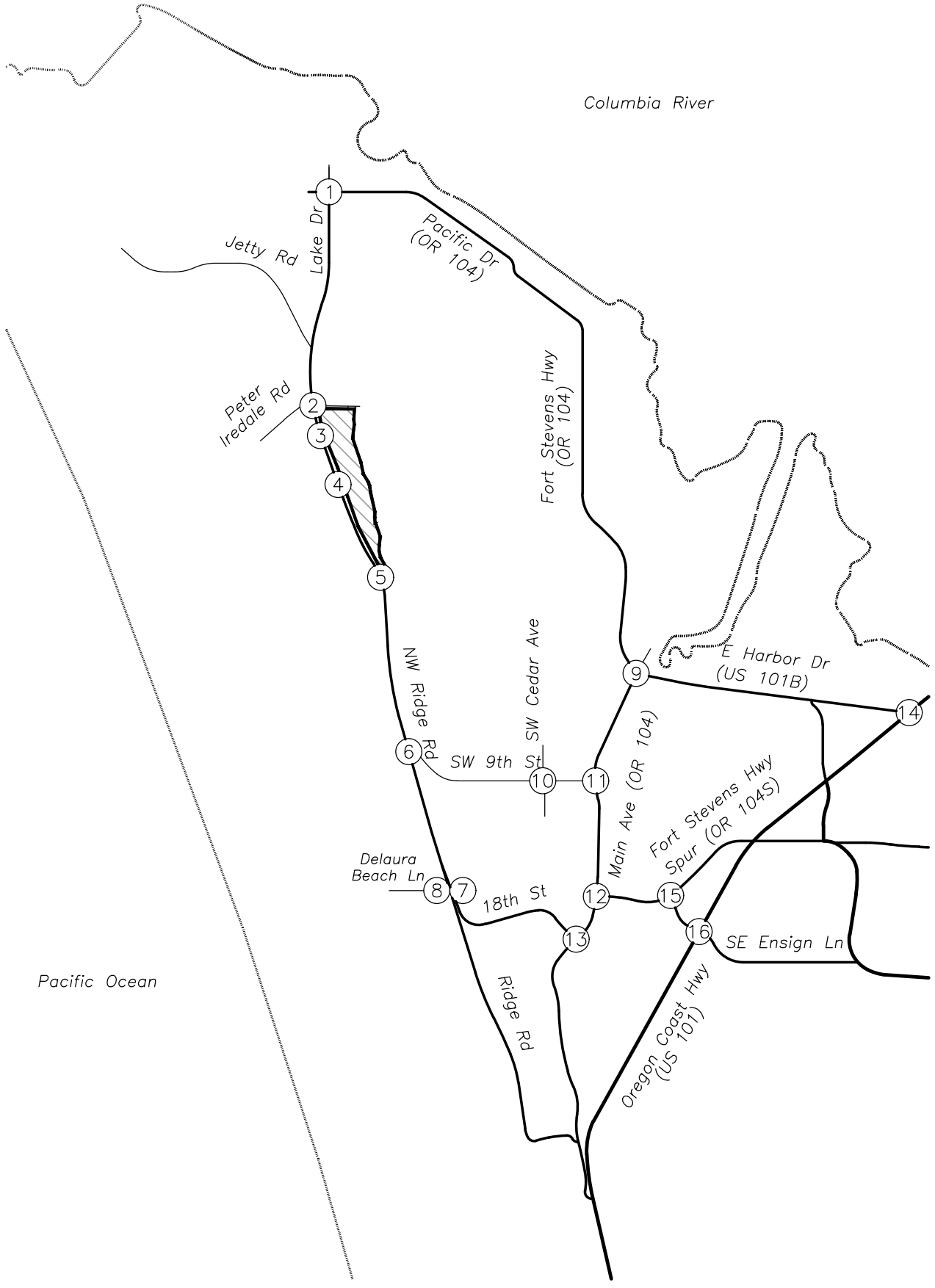
TRAFFIC VOLUMES
 Year 2031 Background Conditions
 PM Peak Hour

Figure 8
 Fort Pointe Planned Unit Development
 8/16/2023



TRAFFIC VOLUMES
 Year 2031 Buildout Conditions
 AM Peak Hour

Figure 9
 Fort Pointe Planned Unit Development
 8/16/2023



No Scale



TRAFFIC VOLUMES
Year 2031 Buildout Conditions
PM Peak Hour

Figure 10
Fort Pointe Planned Unit Development
8/16/2023

Safety Analysis

Crash History Review

Using data obtained from ODOT’s Crash Data System, a review of approximately five years of the most recent available crash history (January 2017 through December 2021) was performed at the study intersections. The crash data was evaluated based on the number of crashes, the type of collisions, and the severity of the collisions. Crash severity is based on injuries sustained by people involved in the collision, and includes five categories:

- *PDO* – Property Damage Only
- *Injury C* – Possible Injury
- *Injury B* – Suspected Minor Injury
- *Injury A* – Suspected Serious Injury
- *Fatality*

Crash rates provide the ability to compare safety risks at different intersections by accounting for both the number of crashes that have occurred during the study period and the number of vehicles that typically travel through the intersection. Crash rates were calculated using the common assumption that traffic counted during the evening peak hour represents approximately 10 percent of the AADT at the intersection.

Table 5 provides a summary of crash types while Table 6 summarizes crash severities and rates for each of the study intersections. Only those intersections with reported crashes are summarized in the tables. Detailed crash data is provided in the Appendix C

Table 5: Collision Type Summary

Intersection		Crash Type								Total
		Turn	Rear End	Angle	Side swipe	Fixed Object	Other	Ped	Bike	
1	Pacific Dr (OR 104) & Lake Dr	0	1	0	0	0	0	0	0	1
2	Peter Iredale Rd & NW Ridge Rd	4	0	0	0	0	0	0	0	4
8	NW Ridge Rd & Delaura Beach Ln	0	1	0	0	0	0	0	0	1
9	E Harbor Dr (US 101B) & N Main Ave (OR 104)	0	0	0	0	0	1	1	0	2
11	SW 9 th St & S Main Ave (OR 104)	5	0	1	0	0	0	0	0	6
12	Fort Stevens Hwy (OR 104S) & Main St (OR 104)	1	0	0	0	0	1	1	0	3
13	SW 18 th St & Main St (OR 104)	0	1	0	0	0	1	0	0	2
14	E Harbor Dr & US 101	1	38	0	2	0	0	0	0	41
15	SE Ensign Ln & Fort Stevens Hwy (OR 104S)	0	1	0	0	1	0	0	0	2
16	SE Ensign Ln & US 101	13	14	2	1	2	3	1	1	37



Table 6: Crash Severity and Rate Summary

Intersection		Severity					Total Crashes	ADT	Crash Rate	90 th % Rate
		PDO	C	B	A	Fatal				
1	Pacific Drive (OR 104) & Lake Drive	1	0	0	0	0	1	1,400	0.391	0.408
2	Peter Iredale Rd & NW Ridge Rd	2	0	2	0	0	4	1,760	1.245	0.408
8	NW Ridge Rd & Delaura Beach Ln	0	0	1	0	0	1	970	0.565	0.408
9	E Harbor Dr (US 101B) & N Main Ave (OR 104)	1	2	0	0	0	3	7,340	0.224	0.408
11	SW 9 th St & S Main Ave (OR 104)	1	4	1	0	0	6	8,390	0.392	0.408
12	Fort Stevens Hwy (OR 104S) & Main St (OR 104)	2	0	0	1	0	3	5,290	0.311	0.293
13	SW 18 th St & Main St (OR 104)	0	1	1	0	0	2	3,050	0.359	0.293
14	E Harbor Dr & US 101	26	11	2	2	0	41	14,430	1.557	0.509
15	SE Ensign Ln & Fort Stevens Hwy (OR 104S)	2	0	0	0	0	2	4,070	0.269	0.293
16	SE Ensign Ln & US 101	18	11	5	3	0	37	16,770	1.209	0.860

Crash Severity

Six of the crashes reported at the study intersections during the five-year analysis period were classified as Injury A, suspected serious injury, but there were no crashes that resulted in a fatality:

- At the intersection of Fort Stevens Highway (OR 104S) & Main Street (OR 104), a southbound vehicle making a left turn struck a pedestrian. The pedestrian sustained injuries classified as Injury A; no injuries were sustained by the driver of the vehicle. The striking driver was reported as cutting corner on turn while the pedestrian was disregarding the traffic signal. The collision occurred under cloudy, wet, dark conditions.
- At the intersection of E Harbor Drive & US 101, a vehicle traveling southwestbound failed to avoid vehicle ahead and struck a vehicle traveling same direction. The passenger in the struck vehicle sustained injuries classified as Injury A; no injuries were sustained by the two drivers. The collision occurred under clear, dry, daytime conditions.
- At the intersection of E Harbor Drive & US 101, a vehicle traveling northeastbound followed too closely and struck a vehicle traveling same direction. The driver in the struck vehicle sustained injuries classified as Injury A and the passenger in the struck vehicle sustained injuries classified as Injury C; no injuries were sustained by the driver of the striking vehicle. The collision occurred under clear, dry, dawn conditions.
- At the intersection of SE Ensign Lane & US 101, a vehicle traveling northwestbound disregarded the signal and struck a vehicle traveling southwest. The driver in the striking vehicle sustained injuries classified as Injury A; no injuries were sustained by the driver in the struck vehicle. Per ODOT's Crash

report, the driver in the striking vehicle had a physical illness at the scene. The collision occurred under clear, dry, daytime conditions.

- At the intersection of SE Ensign Lane & US 101, a vehicle traveling northeastbound disregarded the signal and struck three northeastbound vehicles stopping at the intersection and one northwest vehicle making a right turn. The driver in the striking vehicle sustained injuries classified as Injury A while the other four drivers and one passenger were sustained injuries classified as Injury B. The collision occurred under clear, dry, daytime conditions.
- At the intersection of SE Ensign Lane & US 101, a vehicle traveling southeastbound disregarded the signal and was struck by a vehicle traveling northeast. The driver in the struck vehicle sustained injuries classified as Injury A and the passenger in the striking vehicle sustained injuries classified as Injury B; no injuries were sustained by the driver in the striking vehicle. The collision occurred under cloudy, dry, dawn (7:00 PM, 04/04/2018) conditions.

Pedestrian and Bicycle Collisions

One of the reported crashes involved a bicyclist and three of the reported crashes involved a pedestrian:

- At the intersection of E Harbor Dr (US 101B) & N Main Ave (OR 104), a vehicle traveling westbound struck a pedestrian using a pedestrian conveyance (possibly a bicycle) with inattention. The pedestrian sustained injuries classified as Injury C; no injuries were sustained by the driver of the vehicle. The collision occurred under clear, dry, day conditions.
- At the intersection of Fort Stevens Highway (OR 104S) & Main Street (OR 104), a southbound vehicle making a left turn struck a pedestrian. The pedestrian sustained injuries classified as Injury A; no injuries were sustained by the driver of the vehicle. The striking driver was reported as cutting corner on turn while the pedestrian was disregarding the traffic signal. The collision occurred under cloudy, wet, nighttime (6:00 AM, 12/19/2020) conditions.
- At the intersection of SE Ensign Lane & US 101, a southeastbound vehicle making a left turn struck a pedestrian. The pedestrian sustained injuries classified as Injury C; no injuries were sustained by the driver of the vehicle. As reported, the driver did not yield right of way to the pedestrian. The collision occurred under rainy, wet, daytime conditions.
- At the intersection of SE Ensign Lane & US 101, a northwestbound vehicle making a right turn struck a bicyclist. The bicyclist sustained injuries classified as Injury B; no injuries were sustained by the driver of the vehicle. As reported, the bicyclist did not yield right of way to the vehicle; however, based on the movements, the turning vehicle should have yielded to the bicyclist traveling through. The collision occurred under clear, wet, daytime conditions.

ODOT 90th Percentile Crash Rates

Intersection crash rates were compared to the published statewide 90th percentile crash rates within ODOT's APM. According to Exhibit 4-1: Intersection Crash Rates per MEV by Land Type and Traffic Control in the APM, intersections which experience crash rates in excess of 90th percentile crash rates should be "flagged for further analysis".

Six of the study area intersection were calculated to have a crash rate that exceeds the 90th percentile crash rates for similar intersections:

Peter Iredale Road & NW Ridge Road

The intersection of Peter Iredale Road & NW Ridge Road has a calculated crash rate of 1.245 compared with the 90th percentile rate of 0.408 for four-leg, unsignalized, urban intersections. Four (4) crashes were reported over the most recent five-year analysis period. All these crashes were reported as turning collisions. The cause or error was generally failure to yield right of way or improper overtaking/turn. Three (3) occurred during the peak summer months while one (1) occurred during the winter. Two (2) of the crashes involved collisions between a vehicle turning from the minor road and a through vehicle on the major road and two (2) involved collisions between a turning vehicle on the major road and a through vehicle on the major road. Two (2) of the crashes resulted in property damage only while two (2) resulted in a suspected minor injury (Injury B)

No specific crash trends, such as a recurring type of crash, or crashes causing severe injuries were apparent at the intersection. The high calculated crash rate is due in part to the low volume of traffic entering the intersection on a daily basis. Despite the high crash rate, it is not listed in the ODOT's Safety Priority Index System (SPIS) database of the worst 15 percent of intersections in the state. Therefore, no mitigation is recommended.

NW Ridge Road & Delaura Beach Lane

The intersection of NW Ridge Road & Delaura Beach Lane has a calculated crash rate of 0.565 compared with the 90th percentile rate of 0.408 for four-leg, unsignalized, urban intersections. One (1) crash was reported over the most recent five-year analysis period. It was a rear-end collision that resulted in a suspected minor injury (Injury B).

Despite having a crash rate that exceeds the 90th percentile rate for similar intersections, it is not listed in the ODOT's SPIS database of the worst 15 percent of intersections in the state. The high calculated crash rate is due to the low volume of traffic entering the intersection on a daily basis. Therefore, no safety mitigation is recommended.

Fort Stevens Highway (OR 104S) & Main Street (OR 104)

The intersection of Fort Stevens Highway (OR 104S) & Main Street (OR 104) has a calculated crash rate of 0.311 compared with the 90th percentile rate of 0.293 for three-leg, unsignalized, urban intersections. Three (3) crashes were reported over the most recent five-year analysis period. One (1) crash was reported to involve a pedestrian crossing from south to north who was struck by a vehicle making a southbound left-turn, which resulted in a suspected serious injury (Injury A) for the pedestrian. One (1) was reported as a collision between a vehicle making a westbound left from the minor street and a vehicle making a southbound left from the major street with no reported injuries. The third crash was reported as a backing collision that resulted in property damage only; no details are available.

No specific crash trends, such as a recurring type of crash were apparent at the intersection and the high calculated crash rate is due in part to the low volume of traffic entering the intersection on a daily basis. Despite the high crash rate and one crash resulting in a suspected serious injury (Injury A) to a pedestrian, it is not listed in the ODOT's SPIS database of the worst 15 percent of intersections in the state. Therefore, no safety mitigation is recommended.

SW 18th Street & Main Street (OR 104)

The intersection of SW 18th Street & Main Street (OR 104) has a calculated crash rate of 0.359 compared with the 90th percentile rate of 0.293 for three-leg, unsignalized, urban intersections. Two (2) crashes were reported over the most recent five-year analysis period. One (1) of the crashes was reported as a rear-end collision between two northbound vehicles on Main Street, most likely as one slowed to turn left onto SW 18th Street, resulting in a possible injury (Injury C). The other was reported as a single vehicle that ran into a ditch and overturned while traveling eastbound on SW 18th Street approaching the intersection with Main Street, which resulted in a suspected minor injury (Injury B).

No specific crash trends, such as a recurring type of crash, or crashes causing severe injuries were apparent at the intersection. The high calculated crash rate is due in part to the low volume of traffic entering the intersection on a daily basis. Despite the high crash rate, it is not listed in the ODOT's database of the worst 15 percent of intersections in the state. Therefore, no safety mitigation is recommended.

E Harbor Drive & US 101

The intersection of SW 18th Street & Main Street (OR 104) has a calculated crash rate of 1.557 compared with the 90th percentile rate of 0.509 for three-leg, signalized, urban intersections. Forty-one (41) crashes were reported over the five-year analysis period. Thirty-eight (38) of these crashes were reported as rear-end collisions with 18 reported between vehicles traveling southbound on US 101, 17 reported between vehicles traveling northbound on US 101, and three (3) reported between vehicles traveling eastbound on E Harbor Drive. Two (2) crashes were reported as sideswipe – overtaking, one (1) each in the northbound and southbound direction on US 101. Only one (1) crash was reported as a turning collision between an eastbound vehicle turning left from E Harbor Drive and a northbound vehicle on US 101. The cause or error was generally following too closely or inattention. Twenty-six (26) of the crashes resulted in property damage only, 13 resulted in possible injuries (Injury C) or suspected minor injuries (Injury B), but two (2) resulted in suspected serious injuries (Injury A).

Despite the high crash rate, it is not listed in the ODOT's SPIS database of the worst 15 percent of intersections in the state and ODOT does not identify any planned safety improvements on either roadway. The pattern of rear-end collisions is consistent with trends at signalized intersections, especially those with higher posted speeds (45 mph on all intersection approaches).

SE Ensign Lane & US 101

The intersection of SE Ensign Lane & US 101 has a calculated crash rate of 1.209 compared with the 90th percentile rate of 0.860 for four-leg, signalized, urban intersections. Thirty-seven (37) crashes were reported over the five-year analysis period. Fourteen (14) were rear-end collisions, 15 were turning or angle collisions, two (2) involved pedestrian or bicyclist, and the remaining crashes were an assortment of collision types. The rear-end collisions occurred on all approaches with no discernible pattern. The turning and angle collisions also occurred on all approaches although four (4) involved a collision between a southbound left-turn movement from US 101 to SE Ensign Lane and a northbound through movement. This collision type can sometimes be mitigated by limiting the left-turn movement to protected phasing only; however, the intersection already has this limit in place. The cause of most of the turning and angle collisions was reported as disregarding the signal or failing to yield right of way.

This intersection is listed in the worst five percent of intersection in ODOT's SPIS database. The Warrenton TSP does not identify any improvements at this intersection. No improvements at this intersection are identified in the final 2024-2027 Statewide Transportation Improvement Program (STIP).

Although the crash rate is high and the intersection is listed in the worst five (5) percent of the ODOT SPIS database, the pattern of crashes at this intersection is consistent with many signalized intersections and does not show a consistent trend that could be readily mitigated. Based on these findings, no safety mitigation is recommended.

ODOT SPIS Review

ODOT TransGIS database currently shows the 2020 Safety Priority Index System (SPIS) listing is based on reported crash data for the years 2017 through 2019. The 2021 SPIS² reports (based on 2018 through 2020 crash data) are available online for the state highways system. Both were reviewed for the intersections in the study area.

Only one intersection, SE Ensign Lane & US 101, was listed in the worst 5 percent of SPIS list for both 2020 and 2021. This finding coincides with other factors in the crash review, including high the crash rate and crashes that resulted in an injury classified as Injury A. As noted above, the pattern of crashes at this intersection is consistent with many signalized intersections and does not show a consistent trend that could be readily mitigated. Neither the City TSP nor the ODOT STIP identify improvements to address safety at this intersection. Based on these findings, no safety mitigation is recommended.

Conclusion

Based on a review of the most recent five years of available crash data, six of the study intersections have crash rates that exceed the 90th percentile rates identified by ODOT for similar types of intersections. However, no significant trends or crash patterns were identified that could be mitigated with safety improvements.

At the other nine intersections, crash rates were below the 90th percentile rates and no significant trends or crash patterns were identified.

Based on these findings, no safety mitigation is recommended per the crash data analysis.

Sight Distance Evaluation

A sight distance analysis was conducted at the three site accesses proposed on existing roadways. To evaluate the sight distance available at these intersections, intersection sight distance was measured and recommended in accordance with the current AASHTO manual³. According to AASHTO, the driver's eye is assumed to be 14.5 feet from the near edge of the nearest travel lane of the intersecting street and at a height of 3.5 feet above the minor-street approach pavement. The vehicle driver's eye-height along the major-street approach is assumed to be 3.5 feet above the cross-street pavement.

² Oregon Department of Transportation, Safety Priority Index System, 2021 - On-State, Top 5% Groups - By Score

³ American Association of State Highway and Transportation Officials (AASHTO), A Policy on Geometric Design of Highways and Streets, 7th Edition, 2018.

Based on the posted speed of 45 mph along Ridge Road, the minimum recommended intersection sight distances for maintaining relatively uninterrupted traffic flow along the roadway is 500 feet for the left-turn and 430 feet for the right-turn. At all three proposed access locations, intersection sight distance was measured to be in excess of 600 feet to the north and south of each access.

Based on the detailed analysis, adequate sight distance is available for the proposed site access intersections along Ridge Road. No sight distance mitigation is necessary or recommended.

Warrant Analysis

Left-Turn Lane Warrants

A left-turn refuge is primarily a safety consideration for the major-street approach, removing left-turning vehicles from the through traffic stream. Warrants were based on the methodology outlined in the National Cooperative Highway Research Program (NCHRP) Report Number 457⁴. This methodology evaluates the need for a left-turn lane based on the number of left-turning vehicles, the number of travel lanes, the number of advancing and opposing vehicles, and the roadway travel speed. Detailed information on the warrant analysis is included in Appendix C.

Left-turn warrants are not met at any of the proposed site accesses for the Fort Point PUD. No left-turn lanes are planned or proposed at the site accesses.

Left-turn lane warrants are projected to be met for three of other study intersections under both the 2031 background and buildout conditions; however, no mitigation at these three intersections is necessary or recommended as part of the Fort Pointe PUD.

Peter Iredale Road & NW Ridge Road

Left-turn lane warrants are projected to be met for the northbound approach at the intersection of Peter Iredale Road & NW Ridge Road under the 2031 background and buildout conditions. However, no mitigation at this intersection is recommended as part of the proposed development application for the following reasons:

- The warrant is projected to be met by 2031 regardless of whether or not the proposed Fort Pointe PUD is constructed.
- The proposed development is not projected to add traffic to the northbound left-turn movement at the intersection.
- No high severity or fatal collisions were reported at the intersection, and the intersection is projected to operate within acceptable City of Warrenton mobility standards (see the *Operational Analysis* section).

⁴ Bonneson, James A. and Michael D. Fontaine, NCHRP Report 457: An Engineering Study Guide for Evaluating Intersection Improvements, Transportation Research Board, 2001.

SW 9th Street & NW Ridge Road

Left-turn lane warrants are projected to be met for the southbound approach at the intersection of SW 9th Street & NW Ridge Road under all analysis scenarios through the 2031 buildout year. However, no mitigation at this intersection is recommended as part of the proposed development application for the following reasons:

- The warrant is projected to be met under all analysis conditions regardless of whether or not the proposed Fort Pointe PUD is constructed.
- No crashes were reported at the intersection, and the intersection is projected to operate within acceptable City of Warrenton mobility standards (see the *Operational Analysis* section).

SW 9th Street & S Main Avenue (OR 104)

Left-turn lane warrants are projected to be met for the northbound approach at the intersection of SW 9th Street & S Main Avenue (OR 104) under all analysis scenarios through the 2031 buildout year. However, no mitigation at this intersection is recommended as part of the proposed development application for the following reasons:

- The warrant is projected to be met under all analysis conditions regardless of whether or not the proposed Fort Pointe PUD is constructed.
- The crash rate at the intersection is relatively low, no high severity or fatal collisions were reported at the intersection, and the intersection is projected to operate within acceptable ODOT's mobility standards (see the *Operational Analysis* section).

Preliminary Traffic Signal Warrants

Preliminary traffic signal warrants were examined for the unsignalized study intersections to determine whether the installation of a new traffic signal will be warranted at the intersections by the 2031 future year. Based on the preliminary analysis following a review of Warrant 1 in the *Manual on Uniform Traffic Control Devices*, or MUTCD, traffic signal warrants are not projected to be met at any of the unsignalized study intersections under year 2031 conditions, regardless of whether or not the proposed development is constructed. Therefore, no new traffic signals are necessary or recommended as part of the proposed development application.

Operational Analysis

Intersection Capacity Analysis

A capacity and delay analysis were conducted for each of the study intersections per the signalized and unsignalized intersection analysis methodologies in the *Highway Capacity Manual (HCM)*⁵. Intersections are generally evaluated based on the average control delay experienced by vehicles and are assigned a grade according to their operation. The level of service (LOS) of an intersection can range from LOS A, which indicates very little, or no delay experienced by vehicles, to LOS F, which indicates a high degree of congestion and delay. The volume-to-capacity (v/c) ratio is a measure that compares the traffic volumes (demand) against the available capacity of an intersection.

The analysis was performed using Synchro (version 11) software. The overall signalized v/c ratios were calculated following the methodologies in Chapter 16 of the ODOT APM for the critical intersection v/c ratio. This methodology was performed for all signalized intersections.

Mobility Standards

The following agency mobility standards are applicable in the study area:

- According to the City of Warrenton’s TSP, signalized and unsignalized intersections under City jurisdiction should operate at LOS D during the peak hour of analysis.
- According to the 2015 Clatsop County Transportation System Plan (TSP), adopted October 2015, the following minimum operation standards apply at intersections under City jurisdiction:
 - Two-way stop and yield controlled intersections: During the highest one-hour period on an average weekday (typically, but not always the evening peak period between 4 PM and 6 PM during the spring or fall): All movements serving more than 20 vehicles shall be maintained at LOS “E” or better and a v/c ratio not higher than 0.90. LOS “F” is acceptable at movements serving no more than 20 vehicles during the peak hour.
- ODOT has the following mobility targets in the study area per the Oregon Highway Plan⁶ and subsequent amendments:
 - The intersections of US 101 at E Harbor Drive and SE Ensign Lane have a target v/c ratio of 0.85 or less for an average annual weekday peak hour.
 - The intersections along OR 104 and OR 104S, which are District /Local Interest Roads outside a MPO but within a UGB, have a target v/c ratio of 0.95 or less for the 30th highest annual hour where posted speeds are less than or equal to 35 mph.

⁵ Transportation Research Board, *Highway Capacity Manual 6th Edition*, 2016.

⁶ Oregon Department of Transportation, *Oregon Highway Plan*, Table 6: Volume to Capacity Ratio Targets for Peak Hour Operating Conditions, 1999 Including amendments November 1999 through May 2015.

- The intersections along OR 104 and OR 104S which are District /Local Interest Roads outside an MPO but within a UGB, have a target v/c ratio of 0.90 or less for the 30th highest annual hour where posted speeds are greater than 35 mph and less than or equal to 45 mph.
- Non-state highway approaches are expected to meet or not to exceed the volume to capacity ratios for District/Local Interest Roads.

Per the City of Warrenton’s TSP, alternative mobility standards which include utilizing a v/c ratio of 0.85 for intersections along US-101 based on annual average weekday volumes rather than 30th highest hour volumes, within Warrenton city limits, were recommended to the Oregon Transportation Commission (OTC) and adopted on April 2, 2020.

Delay & Capacity Analysis

The LOS, delay, and v/c results of the capacity analysis are shown in Table 7 for the morning and evening peak hours. The detailed calculations are attached in Appendix D.

Table 7: Capacity Analysis Summary

Intersection (Traffic Control) & Condition	Mobility Standard	AM Peak Hour			PM Peak Hour		
		V/C	LOS	Delay (s)	V/C	LOS	Delay (s)
1. Pacific Drive (OR 104) & Lake Drive (AWSC)							
2023 Existing Condition	0.95	0.20	A	8	0.08	A	7
2031 Background Condition		0.21	A	8	0.09	A	7
2031 Buildout Condition		0.25	A	9	0.15	A	8
2. Peter Iredale Road & NW Ridge Road (TWSC)							
2023 Existing Condition	LOS D 0.90	0.09	B	13	0.03	A	10
2031 Background Condition		0.16	C	17	0.04	B	10
2031 Buildout Condition		0.23	C	17	0.05	B	11
3. North Site Access & NW Ridge Road (TWSC)							
2031 Buildout Condition	LOS D 0.90	0.15	B	13	0.08	B	11
4. Main Site Access & NW Ridge Road							
2023 Existing Condition	LOS D 0.90	0.12	B	13	0.06	B	11
5. South Site Access & NW Ridge Road							
2023 Existing Condition	LOS D 0.90	0.12	B	13	0.07	B	11
6. SW 9th Street & NW Ridge Road (TWSC)							
2023 Existing Condition	LOS D 0.90	0.09	A	9	0.18	B	11
2031 Background Condition		0.12	A	10	0.25	B	12
2031 Buildout Condition		0.17	B	11	0.44	C	16



Table 7: Capacity Analysis Summary

Intersection (Traffic Control) & Condition	Mobility Standard	AM Peak Hour			PM Peak Hour		
		V/C	LOS	Delay (s)	V/C	LOS	Delay (s)
7. Delaura Beach Lane & 18th Street (TWSC)							
2023 Existing Condition	LOS D 0.90	0.09	A	9	0.04	A	9
2031 Background Condition		0.11	A	10	0.05	A	9
2031 Buildout Condition		0.14	B	10	0.10	A	10
8. Delaura Beach Lane & NW Ridge Road (TWSC)							
2023 Existing Condition	LOS D 0.90	0.03	A	9	0.01	A	9
2031 Background Condition		0.05	A	10	0.02	A	10
2031 Buildout Condition		0.05	B	10	0.02	B	10
9. E Harbor Drive (US 101B) & N Main Avenue (OR 104) (AWSC)							
2023 Existing Condition	0.95	0.63	C	18	0.53	B	12
2031 Background Condition		0.68	C	21	0.58	B	13
2031 Buildout Condition		0.79	D	26	0.68	C	16
10. SW 9th Street & SW Cedar Drive (AWSC)							
2023 Existing Condition	LOS D	0.28	A	8	0.15	A	8
2031 Background Condition		0.36	A	9	0.20	A	8
2031 Buildout Condition		0.40	B	10	0.27	A	9
11. SW 9th Street & S Main Avenue (OR 104) (TWSC)							
2023 Existing Condition	0.95	0.22	B	13	0.44	C	24
2031 Background Condition		0.26	B	14	0.54	D	30
2031 Buildout Condition		0.44	C	18	0.84	F	64
12. Fort Stevens Highway Spur (OR 104S) & Main Street (OR 104) (TWSC)							
2023 Existing Condition	0.95	0.68	C	22	0.23	B	12
2031 Background Condition		0.78	D	28	0.26	B	12
2031 Buildout Condition		0.87	E	40	0.43	C	16
13. SW 18th Street & Main Street (OR 104) (TWSC)							
2023 Existing Condition	0.95	0.15	B	11	0.13	B	11
2031 Background Condition		0.16	B	11	0.14	B	11
2031 Buildout Condition		0.25	B	13	0.19	B	12



Table 7: Capacity Analysis Summary

Intersection (Traffic Control) & Condition	Mobility Standard	AM Peak Hour			PM Peak Hour		
		V/C	LOS	Delay (s)	V/C	LOS	Delay (s)
14. E Harbor Drive & US 101 (Signalized)							
2023 Existing Condition	0.85	0.70	B	12	0.59	A	10
2031 Background Condition		0.75	B	14	0.60	B	11
2031 Buildout Condition		0.79	B	17	0.65	B	11
15. Fort Stevens Highway Spur (OR 104S) & SE Ensign Lane (TWSC)							
2023 Existing Condition	0.90	0.47	B	15	0.14	B	10
2031 Background Condition		0.53	C	17	0.16	B	11
2031 Buildout Condition		0.57	C	18	0.24	B	11
16. SE Ensign Lane & US 101 (Signalized)							
2023 Existing Condition	0.85	0.64	C	27	0.37	B	18
2031 Background Condition		0.69	C	30	0.41	B	18
2031 Buildout Condition		0.71	C	31	0.43	B	19

Notes:

BOLDED text indicates that the intersection exceeds the performance standards.

AWSC = All-way stop control; TWSC = two-way stop control

Based on the results of the operational analysis, all study intersections are currently operating acceptably per the agency standards and are projected to continue operating acceptably through the 2031 buildout year of the site. Accordingly, no operational mitigation is necessary or recommended at the study intersections.

Queuing Analysis

An analysis of projected queuing was conducted for the study intersections. The 95th percentile queue lengths were estimated based on the same Synchro/SimTraffic simulations used for the delay calculations. The 95th percentile queue is a statistical measurement which indicates there is a 5 percent chance that the queue may exceed this length during the analysis period; however, given this is a probability, the 95th percentile queue length may theoretically never be met or observed in the field.

The 95th percentile queue lengths reported in the simulation are presented in Table 8 for the morning and evening peak hours. All queues more than 5 feet longer than a multiple of 25 were rounded up to the nearest 25 feet, equivalent to an average vehicle length. Those that were 5 feet or less than a multiple of 25 were rounded down since 5 feet is equivalent to the space between queued vehicles. Detailed queuing analysis reports are included in Appendix D.



Table 8: 95th Percentile Queueing Analysis Summary

Intersection (Traffic Control)/Movement	Available Storage (ft)	2031 Background Queue (ft)		2031 Buildout Queue (ft)	
		Morning	Evening	Morning	Evening
1. Pacific Drive (OR 104) & Lake Drive (AWSC)					
EB Approach	880	50	50	50	50
WB Approach	330	100	75	100	100
NB Approach	1,000	75	50	75	50
SB Approach	25	50	50	50	50
2. Peter Iredale Road & NW Ridge Road (TWSC)					
EB Approach	1,000	50	50	50	50
WB Approach	50	50	50	50	50
NB Approach	500	50	25	50	25
SB Approach	>1,000	25	0	25	25
3. North Site Access & NW Ridge Road (TWSC)					
WB Approach	≥75	-	-	50	50
NB Approach	≥500	-	-	0	0
SB Approach	≥500	-	-	25	25
4. Main Site Access & NW Ridge Road (TWSC)					
WB Approach	≥75	-	-	50	50
NB Approach	≥500	-	-	0	0
SB Approach	≥500	-	-	25	25
5. South Site Access & NW Ridge Road (TWSC)					
WB Approach	≥75	-	-	50	50
NB Approach	≥500	-	-	0	0
SB Approach	≥500	-	-	25	25
6. SW 9th Street & NW Ridge Road (TWSC)					
WB Approach	960	50	50	50	75
NB Approach	>1,000	0	0	0	0
SB Approach	840	25	75	50	100
7. Delaura Beach Lane & 18th Street (TWSC)					
EB Approach	25	50	25	50	25
NB Approach	>1,000	25	0	25	25
SB Approach	580	0	0	0	0



Table 8: 95th Percentile Queueing Analysis Summary

Intersection (Traffic Control)/Movement	Available Storage (ft)	2031 Background Queue (ft)		2031 Buildout Queue (ft)	
		Morning	Evening	Morning	Evening
8. Delaura Beach Lane & NW Ridge Road (TWSC)					
EB Approach	750	25	25	25	25
WB Approach	25	50	25	50	25
NB Approach	1,000	25	25	25	25
SB Approach	300	0	0	0	0
9. E Harbor Drive (US 101B) & N Main Avenue (OR 104) (AWSC)					
EB Left	175	25	25	25	25
EB Through-Right	580	150	125	175	125
WB Left	150	125	75	150	75
WB Through-Right	210	150	100	150	100
NB Left-Through	155	125	100	125	100
NB Right	50	125	100	125	125
SB Left-Through	90	75	75	75	75
SB Right	50	0	0	0	0
10. SW 9th Street & SW Cedar Drive (AWSC)					
EB Approach	>1,000	75	75	100	100
WB Approach	680	75	50	75	75
NB Approach	>1,000	50	25	50	25
SB Approach	540	50	75	50	50
11. SW 9th Street & S Main Avenue (OR 104) (TWSC)					
EB Approach	250	75	100	100	125
WB Approach	125	25	25	25	25
NB Approach	500	50	75	25	100
SB Approach	230	0	25	0	25
12. Fort Stevens Highway Spur (OR 104S) & Main Street (OR 104) (TWSC)					
WB Left-Right	>1,000	175	75	225	100
NB Through-Right	>1,000	0	25	25	0
SB Left	170	75	75	75	50
SB Through	60	0	0	0	0
13. SW 18th Street & Main Street (OR 104) (TWSC)					
EB Approach	>1,000	50	25	50	50
NB Approach	950	50	25	50	25
SB Approach	>1,000	0	0	0	0



Table 8: 95th Percentile Queuing Analysis Summary

Intersection (Traffic Control)/Movement	Available Storage (ft)	2031 Background Queue (ft)		2031 Buildout Queue (ft)	
		Morning	Evening	Morning	Evening
14. E Harbor Drive & US 101 (Signalized)					
EB Left	>1,000	125	125	100	125
EB Right	770	50	25	50	25
NB Left	250	75	50	75	50
NB Through	>1,000	275	150	300	175
SB Through	>1,000	250	150	275	150
SB Right	400	50	75	75	50
15. Fort Stevens Highway Spur (OR 104S) & SE Ensign Lane (TWSC)					
WB Left	125	150	75	150	75
WB Right	>1,000	100	25	125	25
NB Through	350	0	0	25	0
NB Right	180	25	25	25	0
SB Left-Through	690	50	50	75	50
16. SE Ensign Lane & US 101 (Signalized)					
EB Left	275	225	125	250	125
EB Through-Right	>1,000	275	125	300	150
WB Left	320	150	75	150	75
WB Through	510	200	100	200	125
WB Right	320	50	50	50	50
NB Left	600	100	75	100	75
NB Through	>1,000	225	175	225	175
NB Right	420	100	75	125	75
SB Left	410	200	100	225	100
SB Through	>1,000	175	100	150	100
SB Through-Right	410	175	100	175	125

Notes:

BOLDED text indicates queue length exceeding storage capacity.

AWSC = All-way stop control; TWSC = two-way stop control

In general, changes in 95th percentile queuing between the year 2031 background and buildout conditions are anticipated to be small, one vehicle or two vehicles. The 95th percentile queues are expected to exceed available storage at the following locations:

- Queues on the southbound approach of Pacific Drive (OR 104) at Lake Drive are estimated at 50 feet, approximately two vehicles, which would extend northward through the intersection with 6th Street during both the morning and evening peak hours of the background and buildout conditions. This



approach only has storage for one vehicle between Pacific Drive and 6th Street. The average queue is estimated at one vehicle.

- Queues on the eastbound approach of Delaura Beach Lane at 18th Street are estimated at 50 feet, approximately two vehicles, which would extend westward through the intersection with NW Ridge Road during the morning peak hour of both the background and buildout conditions. This approach only has storage for one vehicle between 18th Street and NW Ridge Road. When a second vehicle is present, it would briefly queue at the eastbound stop at NW Ridge Road. The average queue is estimated at one vehicle.
- Queues on the westbound approach of Delaura Beach Lane at NW Ridge Road are estimated at 50 feet, approximately two vehicles, which would extend westward through the intersection with NW Ridge Road during the morning peak hour of both the background and buildout conditions. This approach only has storage for one vehicle between 18th Street and NW Ridge Road. When a second vehicle is present, it would briefly queue in the northbound lane on 18th Street until it could turn left. The average queue is estimated at one vehicle.
- Queues on the northbound right turn lane of E Harbor Drive at N Main Avenue (OR 104) are expected to extend southward into the adjacent through lane during both the morning and evening peak hours of both the background and buildout conditions. This queue would not affect any nearby roadways or driveways.
- Queues on the northwestbound approach of SE Ensign Lane at Fort Stevens Highway Spur (OR 104S) are expected to extend southeastward past the right-turn lane during the morning peak hour of both the background and buildout conditions. This queue would not affect any nearby roadways or driveways.

Although several of the 95th percentile queues are estimated to extend beyond available storage, the queues would be present under both background and buildout conditions. The proposed Fort Pointe PUD will not measurably change any of these queues.

Conclusions

Key findings of this study include:

- A review of the most recent five years of available crash data found that six of the study intersections have crash rates that exceed the 90th percentile rates identified by ODOT for similar types of intersections. However, no significant trends or crash patterns were identified that could be mitigated with safety improvements. At the other nine intersections, crash rates were below the 90th percentile rates and no significant trends or crash patterns were identified. Based on these findings, no safety mitigation is recommended per the crash data analysis.
- All proposed site accesses are expected to have adequate sight lines; no mitigation pertaining to sight distance is required.
- Based on the left-turn warrants evaluation, no mitigation to the study intersections is necessary or recommended as part of the Fort Pointe PUD project.
- Traffic signal warrants are not projected to be met at any of the unsignalized study intersections under year 2031 conditions; therefore, no new traffic signals are necessary or recommended as part of the proposed development application.
- Based on the results of the operational analysis, all study intersections are currently operating acceptably per the agency standards and are projected to continue operating acceptably through the 2031 buildout year of the site. Accordingly, no operational mitigation is necessary or recommended at the study intersections.
- In general, changes in 95th percentile queuing between the year 2031 background and buildout conditions are anticipated to be small, one vehicle or two vehicles. Although several of the 95th percentile queues are estimated to extend beyond available storage, the queues would be present under both background and buildout conditions. The proposed project will not measurably change any of these queues.

Appendix A – Site Information

Site Plan

Trip Generation Calculations





FORT POINTE COMMUNITY

DRAFT MASTER PLAN

05.16.2023



TRIP GENERATION CALCULATIONS

Phase 5

Land Use: Single-Family Detached Housing
Land Use Code: 210
Land Use Subcategory: All Sites
Setting/Location: General Urban/Suburban
Variable: Dwelling Units
Trip Type: Vehicle
Formula Type: Equation
Variable Quantity: **210**

AM PEAK HOUR

Trip Rate: =EXP(0.91*LN(\$X2)+0.12)

	Enter	Exit	Total
Directional Split	25%	75%	
Trip Ends	37	109	146

PM PEAK HOUR

Trip Rate: =EXP(0.94*LN(\$X2)+0.27)

	Enter	Exit	Total
Directional Split	63%	37%	
Trip Ends	126	74	200

WEEKDAY

Trip Rate: =EXP(0.92*LN(\$X2)+2.68)

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	998	998	1,996

SATURDAY

Trip Rate: =EXP(0.97*LN(\$X2)+2.4)

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	986	986	1,972

Source: Trip Generation Manual, 11th Edition



TRIP GENERATION CALCULATIONS

Phase 5

Land Use: Single-Family Attached Housing
Land Use Code: 215
Land Use Subcategory: All Sites
Setting/Location: General Urban/Suburban
Variable: Dwelling Units
Trip Type: Vehicle
Formula Type: Equation
Variable Quantity: **30**

AM PEAK HOUR

Trip Rate: =0.52*(\$X3)-5.7

	Enter	Exit	Total
Directional Split	25%	75%	
Trip Ends	3	7	10

PM PEAK HOUR

Trip Rate: =0.6*(\$X3)-3.93

	Enter	Exit	Total
Directional Split	59%	41%	
Trip Ends	8	6	14

WEEKDAY

Trip Rate: =7.62*(\$X3)-50.48

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	89	89	178

SATURDAY

Trip Rate: =13.21*(\$X3)-444.34

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	#NUM!	#NUM!	#NUM!

Source: Trip Generation Manual, 11th Edition



TRIP GENERATION CALCULATIONS

Phase 5

Land Use: Multifamily Housing (Low-Rise)
Land Use Code: 220
Land Use Subcategory: Not Close to Rail Transit
Setting/Location: General Urban/Suburban
Variable: Dwelling Units
Trip Type: Vehicle
Formula Type: Equation
Variable Quantity: **210**

AM PEAK HOUR

Trip Rate: $=0.31*(\$X5)+22.85$

	Enter	Exit	Total
Directional Split	24%	76%	
Trip Ends	21	67	88

PM PEAK HOUR

Trip Rate: $=0.43*(\$X5)+20.55$

	Enter	Exit	Total
Directional Split	63%	37%	
Trip Ends	70	41	111

WEEKDAY

Trip Rate: $=6.41*(\$X5)+75.31$

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	711	711	1,422

SATURDAY

Trip Rate: $=4.55*(\$X5)$

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	478	478	956

Caution: Small Sample Size

Source: Trip Generation Manual, 11th Edition

Appendix B – Volumes

Traffic Counts





ALL TRAFFIC DATA SERVICES

(303) 216-2439

www.alltrafficdata.net

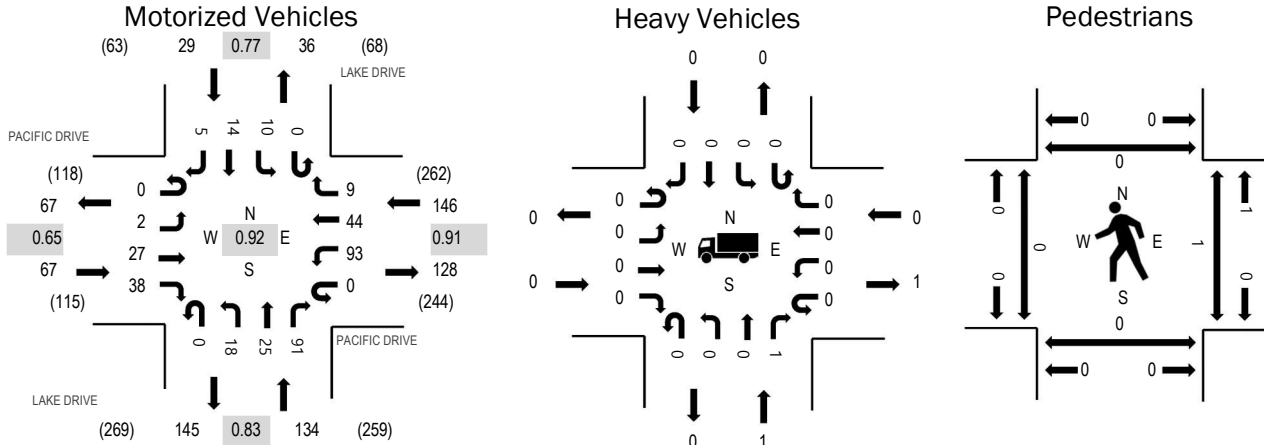
Location: 1 LAKE DRIVE & PACIFIC DRIVE AM

Date: Tuesday, July 18, 2023

Peak Hour: 07:40 AM - 08:40 AM

Peak 15-Minutes: 07:55 AM - 08:10 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.65
WB	0.0%	0.91
NB	0.7%	0.83
SB	0.0%	0.77
All	0.3%	0.92

Traffic Counts - Motorized Vehicles

Interval Start Time	PACIFIC DRIVE Eastbound				PACIFIC DRIVE Westbound				LAKE DRIVE Northbound				LAKE DRIVE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	0	2	1	0	2	4	0	0	6	2	7	0	0	2	0	26	342
7:05 AM	0	0	1	4	0	9	2	1	0	3	2	5	0	2	0	0	29	351
7:10 AM	0	1	0	2	0	6	2	1	0	2	2	5	0	2	3	1	27	354
7:15 AM	0	0	4	1	0	7	1	2	0	1	1	7	0	1	1	0	26	349
7:20 AM	0	0	0	2	0	10	1	0	0	0	1	5	0	2	0	1	22	351
7:25 AM	0	0	1	4	0	10	0	1	0	1	2	5	0	1	1	1	27	366
7:30 AM	0	0	1	5	0	6	2	0	0	0	1	10	0	1	3	0	29	365
7:35 AM	0	0	1	1	0	8	4	0	0	2	4	2	0	2	1	0	25	369
7:40 AM	0	0	0	3	0	7	3	1	0	4	3	11	0	1	0	0	33	376
7:45 AM	0	1	4	3	0	14	6	1	0	1	2	4	0	3	1	0	40	374
7:50 AM	0	0	0	5	0	7	1	0	0	2	0	6	0	0	1	1	23	361
7:55 AM	0	1	4	6	0	6	4	1	0	1	3	7	0	0	2	0	35	366
8:00 AM	0	0	3	3	0	10	4	1	0	2	1	9	0	1	0	1	35	357
8:05 AM	0	0	7	3	0	5	4	2	0	0	5	4	0	1	1	0	32	
8:10 AM	0	0	1	3	0	5	4	0	0	1	0	5	0	1	2	0	22	
8:15 AM	0	0	1	1	0	5	5	0	0	2	1	9	0	1	2	1	28	
8:20 AM	0	0	2	6	0	7	4	0	0	2	1	13	0	0	1	1	37	
8:25 AM	0	0	1	1	0	6	3	0	0	1	4	8	0	0	1	1	26	
8:30 AM	0	0	2	3	0	9	2	2	0	1	2	10	0	1	1	0	33	
8:35 AM	0	0	2	1	0	12	4	1	0	1	3	5	0	1	2	0	32	
8:40 AM	0	0	1	2	0	6	1	1	0	1	4	11	0	3	1	0	31	
8:45 AM	0	0	4	1	0	7	3	1	0	1	2	6	0	1	0	1	27	
8:50 AM	0	0	3	1	0	5	2	1	0	4	1	8	0	2	1	0	28	
8:55 AM	0	0	1	4	0	7	3	0	0	1	1	9	0	0	0	0	26	
Count Total	0	3	46	66	0	176	69	17	0	40	48	171	0	27	27	9	699	
Peak Hour	0	2	27	38	0	93	44	9	0	18	25	91	0	10	14	5	376	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0	7:05 AM	0	0	1	0	1
7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0	7:15 AM	0	1	0	0	1	7:15 AM	0	0	0	0	0
7:20 AM	0	0	1	0	1	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0	7:25 AM	0	0	2	0	2
7:30 AM	0	0	0	0	0	7:30 AM	1	0	0	0	1	7:30 AM	0	0	0	0	0
7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	0	0	0	0	7:55 AM	1	0	0	0	1	7:55 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	0	0	0	0	8:20 AM	0	1	0	1	2	8:20 AM	0	0	2	0	2
8:25 AM	0	1	0	0	1	8:25 AM	0	0	0	0	0	8:25 AM	0	0	1	0	1
8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	2	2	8:40 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	0	0	0	0	8:50 AM	1	0	0	0	1	8:50 AM	0	0	0	0	0
8:55 AM	0	0	0	0	0	8:55 AM	2	0	0	0	2	8:55 AM	0	0	0	0	0
Count Total	0	1	1	0	2	Count Total	5	2	0	3	10	Count Total	0	0	6	0	6
Peak Hour	0	1	0	0	1	Peak Hour	1	1	0	1	3	Peak Hour	0	0	3	0	3

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0	7:00 AM	0	4	0	0	4
7:05 AM	0	1	0	0	1	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	0	0	0	0	7:10 AM	0	1	0	1	2	7:10 AM	0	0	1	0	1
7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0	7:15 AM	0	0	2	0	2
7:20 AM	0	0	0	1	1	7:20 AM	0	0	0	0	0	7:20 AM	0	0	2	1	3
7:25 AM	0	0	0	0	0	7:25 AM	0	1	0	0	1	7:25 AM	2	4	0	0	6
7:30 AM	0	1	0	0	1	7:30 AM	0	0	0	0	0	7:30 AM	0	0	2	1	3
7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	2	2	7:35 AM	0	0	0	0	0
7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	1	1
7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0	8:05 AM	1	0	2	0	3
8:10 AM	0	0	0	0	0	8:10 AM	1	1	0	0	2	8:10 AM	0	2	0	0	2
8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0	8:15 AM	0	0	1	0	1
8:20 AM	0	1	0	0	1	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	0	1	0	0	1	8:40 AM	0	0	0	0	0	8:40 AM	0	1	0	0	1
8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	1	1	8:45 AM	0	0	0	0	0
8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	0	4	0	1	5	Count Total	1	3	0	4	8	Count Total	3	11	10	3	27
Peak Hour	0	1	0	0	1	Peak Hour	1	1	0	0	2	Peak Hour	1	2	3	1	7

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	1	2	0	3	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	1	1	7:20 AM	0	0	0	0	0
7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0	8:00 AM	0	0	2	0	2	8:00 AM	0	0	0	0	0
8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	2	2	8:40 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	0	1	2	0	3	Count Total	0	0	2	3	5	Count Total	0	0	0	0	0
Peak Hour	0	1	2	0	3	Peak Hour	0	0	2	1	3	Peak Hour	0	0	0	0	0



ALL TRAFFIC DATA SERVICES

(303) 216-2439

www.alltrafficdata.net

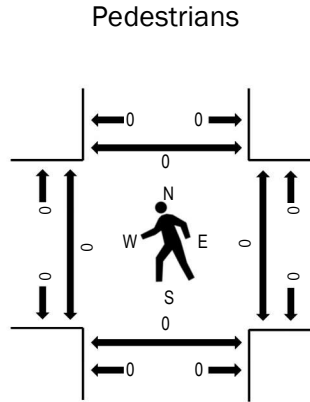
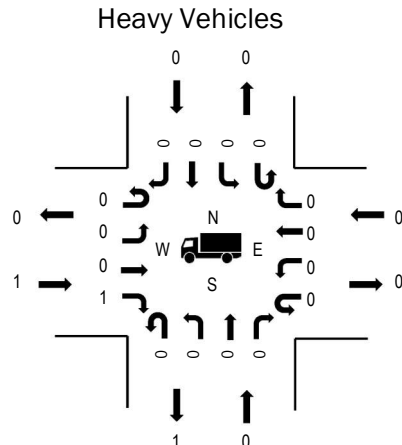
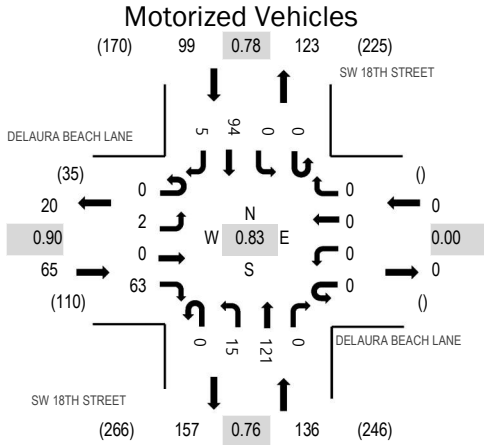
Location: 4 SW 18TH STREET & DELAURA BEACH LANE AM

Date: Tuesday, July 18, 2023

Peak Hour: 07:45 AM - 08:45 AM

Peak 15-Minutes: 08:05 AM - 08:20 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	1.5%	0.90
WB	0.0%	0.00
NB	0.0%	0.76
SB	0.0%	0.78
All	0.3%	0.83

Traffic Counts - Motorized Vehicles

Interval Start Time	DELAURA BEACH LANE Eastbound				DELAURA BEACH LANE Westbound				SW 18TH STREET Northbound				SW 18TH STREET Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	0	0	4	0	0	0	0	0	0	10	0	0	0	5	1	20	246
7:05 AM	0	1	0	4	0	0	0	0	0	1	8	0	0	0	2	1	17	245
7:10 AM	0	0	0	2	0	0	0	0	0	0	7	0	0	0	5	0	14	262
7:15 AM	0	1	0	8	0	0	0	0	0	1	12	0	0	0	12	0	34	279
7:20 AM	0	0	0	7	0	0	0	0	0	1	8	0	0	0	5	0	21	270
7:25 AM	0	0	0	2	0	0	0	0	0	1	6	0	0	0	2	0	11	281
7:30 AM	0	0	0	3	0	0	0	0	0	3	9	0	0	0	7	2	24	293
7:35 AM	0	0	0	3	0	0	0	0	0	0	10	0	0	0	8	0	21	294
7:40 AM	0	1	0	5	0	0	0	0	0	1	9	0	0	0	0	0	16	296
7:45 AM	0	0	0	7	0	0	0	0	0	1	9	0	0	0	6	0	23	300
7:50 AM	0	0	0	2	0	0	0	0	0	0	11	0	0	0	6	0	19	293
7:55 AM	0	2	0	4	0	0	0	0	0	3	8	0	0	0	9	0	26	290
8:00 AM	0	0	0	4	0	0	0	0	0	0	3	0	0	0	12	0	19	280
8:05 AM	0	0	0	8	0	0	0	0	0	1	15	0	0	0	10	0	34	
8:10 AM	0	0	0	2	0	0	0	0	0	2	16	0	0	0	11	0	31	
8:15 AM	0	0	0	6	0	0	0	0	0	2	10	0	0	0	6	1	25	
8:20 AM	0	0	0	6	0	0	0	0	0	1	16	0	0	0	8	1	32	
8:25 AM	0	0	0	6	0	0	0	0	0	2	9	0	0	0	5	1	23	
8:30 AM	0	0	0	5	0	0	0	0	0	1	9	0	0	0	9	1	25	
8:35 AM	0	0	0	5	0	0	0	0	0	2	11	0	0	0	5	0	23	
8:40 AM	0	0	0	8	0	0	0	0	0	0	4	0	0	0	7	1	20	
8:45 AM	0	0	0	2	0	0	0	0	0	2	4	0	0	0	8	0	16	
8:50 AM	0	0	0	1	0	0	0	0	0	1	6	0	0	0	8	0	16	
8:55 AM	0	0	0	1	0	0	0	0	0	0	10	0	0	0	5	0	16	
Count Total	0	5	0	105	0	0	0	0	0	26	220	0	0	0	161	9	526	
Peak Hour	0	2	0	63	0	0	0	0	0	15	121	0	0	0	94	5	300	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	1	0	0	1	7:00 AM	1	0	0	0	1	7:00 AM	0	0	0	0	0
7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	1	0	0	0	1	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	1	0	0	0	1	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	2	1	0	0	3	Count Total	1	0	0	0	1	Count Total	0	0	0	0	0
Peak Hour	1	0	0	0	1	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	0	1	0	0	1	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	0	1	0	0	1	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	0	2	0	0	2	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	0	1	0	0	1	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0



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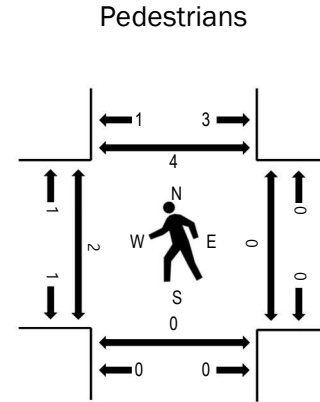
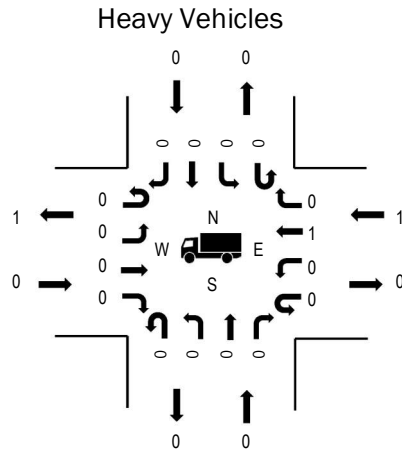
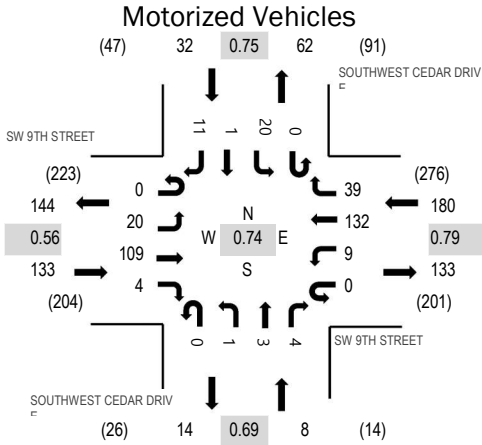
Location: 6 SOUTHWEST CEDAR DRIVE & SW 9TH STREET AM

Date: Tuesday, July 18, 2023

Peak Hour: 07:30 AM - 08:30 AM

Peak 15-Minutes: 08:05 AM - 08:20 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.56
WB	0.6%	0.79
NB	0.0%	0.69
SB	0.0%	0.75
All	0.3%	0.74

Traffic Counts - Motorized Vehicles

Interval Start Time	SW 9TH STREET Eastbound				SW 9TH STREET Westbound				SOUTHWEST CEDAR DRIVE Northbound				SOUTHWEST CEDAR DRIVE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	0	4	0	0	0	8	0	0	0	0	0	0	0	0	0	12	264
7:05 AM	0	1	7	1	0	0	8	4	0	0	0	0	0	0	0	1	22	273
7:10 AM	0	0	2	0	0	1	9	2	0	0	0	0	0	0	0	0	14	286
7:15 AM	0	0	2	0	0	0	2	2	0	1	0	1	0	0	1	1	10	325
7:20 AM	0	1	3	1	0	2	6	1	0	0	1	0	0	1	0	1	17	346
7:25 AM	0	1	8	0	0	1	5	3	0	1	0	0	0	1	1	0	21	350
7:30 AM	0	0	7	0	0	0	13	2	0	0	0	0	0	1	0	1	24	353
7:35 AM	0	3	3	0	0	0	10	2	0	0	0	1	0	1	1	2	23	347
7:40 AM	0	3	6	0	0	0	14	0	0	1	0	0	0	1	0	2	27	334
7:45 AM	0	1	9	0	0	1	12	2	0	0	0	0	0	2	0	1	28	328
7:50 AM	0	5	2	0	0	2	15	9	0	0	0	1	0	1	0	2	37	317
7:55 AM	0	2	7	0	0	1	13	2	0	0	0	1	0	2	0	1	29	293
8:00 AM	0	0	5	0	0	1	9	4	0	0	1	0	0	0	0	1	21	277
8:05 AM	0	0	18	1	0	2	9	3	0	0	1	0	0	1	0	0	35	
8:10 AM	0	2	30	1	0	0	9	6	0	0	1	0	0	3	0	1	53	
8:15 AM	0	1	5	1	0	1	14	4	0	0	0	0	0	5	0	0	31	
8:20 AM	0	1	8	1	0	1	6	2	0	0	0	0	0	2	0	0	21	
8:25 AM	0	2	9	0	0	0	8	3	0	0	0	1	0	1	0	0	24	
8:30 AM	0	0	6	0	0	2	6	3	0	0	0	0	0	0	0	1	18	
8:35 AM	0	0	4	0	0	0	3	0	0	0	0	2	0	0	0	1	10	
8:40 AM	0	2	9	0	0	0	6	1	0	0	0	0	0	1	1	1	21	
8:45 AM	0	0	11	0	0	0	4	2	0	0	0	0	0	0	0	0	17	
8:50 AM	0	1	2	0	0	1	8	0	0	0	0	0	0	1	0	0	13	
8:55 AM	0	2	3	0	0	0	4	2	0	0	0	0	0	0	0	2	13	
Count Total	0	28	170	6	0	16	201	59	0	3	4	7	0	24	4	19	541	
Peak Hour	0	20	109	4	0	9	132	39	0	1	3	4	0	20	1	11	353	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	0	0	0	7:00 AM	3	0	0	0	3	7:00 AM	0	0	0	0	0
7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	0	0	0	0	7:10 AM	0	0	3	0	3	7:10 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0	7:20 AM	1	0	0	1	2
7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0	7:30 AM	1	0	0	3	4
7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0	7:45 AM	1	0	0	1	2
7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	1	1
8:10 AM	0	0	0	0	0	8:10 AM	0	1	0	0	1	8:10 AM	1	0	0	0	1
8:15 AM	0	0	1	0	1	8:15 AM	0	0	1	0	1	8:15 AM	2	0	0	0	2
8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0	8:35 AM	2	0	0	0	2
8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	0	0	1	0	1	Count Total	3	1	4	0	8	Count Total	8	0	0	6	14
Peak Hour	0	0	1	0	1	Peak Hour	0	1	1	0	2	Peak Hour	5	0	0	5	10

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	1	0	1	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	1	0	1	1	3	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	1	2	1	4	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	0	0	1	1	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	0	1	1	2	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	0	1	0	0	1	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0	7:35 AM	0	0	1	0	1
7:40 AM	0	0	2	0	2	7:40 AM	0	0	0	0	0	7:40 AM	0	1	1	0	2
7:45 AM	0	0	1	0	1	7:45 AM	0	0	0	0	0	7:45 AM	0	0	1	0	1
7:50 AM	0	1	0	0	1	7:50 AM	0	0	0	0	0	7:50 AM	0	0	1	0	1
7:55 AM	0	0	2	0	2	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	0	2	0	2	8:10 AM	0	0	1	0	1	8:10 AM	0	0	0	0	0
8:15 AM	0	0	1	0	1	8:15 AM	0	0	0	0	0	8:15 AM	0	0	1	0	1
8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	1	1	8:20 AM	0	0	3	0	3
8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0	8:25 AM	0	0	1	0	1
8:30 AM	1	0	0	0	1	8:30 AM	0	0	0	0	0	8:30 AM	0	0	1	0	1
8:35 AM	0	0	0	1	1	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0	8:45 AM	0	0	3	0	3
8:50 AM	0	0	0	1	1	8:50 AM	0	0	0	0	0	8:50 AM	0	0	1	0	1
8:55 AM	0	1	0	0	1	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	2	4	13	6	25	Count Total	0	0	1	1	2	Count Total	0	1	14	0	15
Peak Hour	0	2	8	0	10	Peak Hour	0	0	1	1	2	Peak Hour	0	1	9	0	10

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	2	0	0	2	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	0	0	1	1	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	0	0	2	2	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	1	0	1	2	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	0	3	0	0	3	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	0	0	1	1	7:40 AM	0	0	0	0	0	7:40 AM	0	0	1	0	1
7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	2	2	0	1	5	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	0	0	1	1	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0	8:00 AM	0	1	0	0	1	8:00 AM	0	0	1	0	1
8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	2	0	0	2	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	0	0	3	3	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	1	0	0	1	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	1	1	8:30 AM	0	0	0	0	0
8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	1	1	8:35 AM	0	0	0	0	0
8:40 AM	0	1	0	0	1	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	1	0	0	0	1	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	3	12	0	10	25	Count Total	0	1	0	2	3	Count Total	0	0	2	0	2
Peak Hour	2	8	0	6	16	Peak Hour	0	1	0	0	1	Peak Hour	0	0	2	0	2



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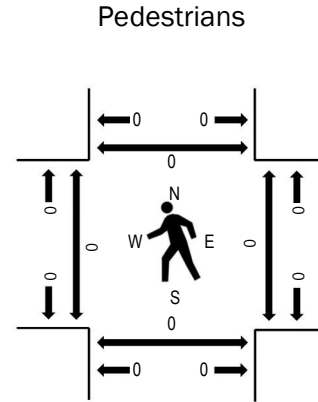
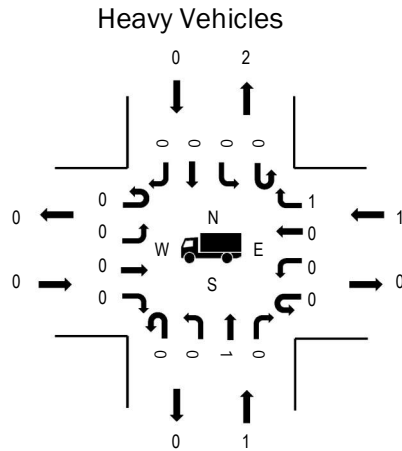
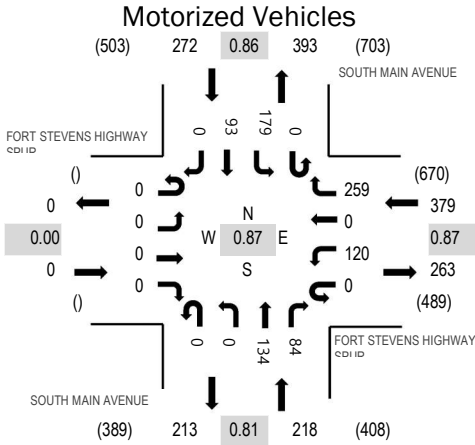
Location: 9 SOUTH MAIN AVENUE & FORT STEVENS HIGHWAY SPUR AM

Date: Tuesday, July 18, 2023

Peak Hour: 07:35 AM - 08:35 AM

Peak 15-Minutes: 08:05 AM - 08:20 AM

Peak Hour



	HV%	PHF
EB	0.0%	0.00
WB	0.3%	0.87
NB	0.5%	0.81
SB	0.0%	0.86
All	0.2%	0.87

Traffic Counts - Motorized Vehicles

Interval Start Time	FORT STEVENS HIGHWAY Eastbound				FORT STEVENS HIGHWAY Westbound				SOUTH MAIN AVENUE Northbound				SOUTH MAIN AVENUE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	0	0	0	0	5	0	15	0	0	2	8	0	13	12	0	55	791
7:05 AM	0	0	0	0	0	9	0	19	0	0	10	3	0	19	5	0	65	790
7:10 AM	0	0	0	0	0	3	0	19	0	0	6	8	0	13	7	0	56	808
7:15 AM	0	0	0	0	0	14	0	8	0	0	9	8	0	9	7	0	55	831
7:20 AM	0	0	0	0	0	13	0	17	0	0	9	10	0	8	9	0	66	863
7:25 AM	0	0	0	0	0	8	0	17	0	0	13	5	0	13	5	0	61	866
7:30 AM	0	0	0	0	0	7	0	28	0	0	6	10	0	13	5	0	69	863
7:35 AM	0	0	0	0	0	8	0	22	0	0	7	8	0	19	6	0	70	869
7:40 AM	0	0	0	0	0	8	0	16	0	0	8	4	0	12	6	0	54	846
7:45 AM	0	0	0	0	0	7	0	25	0	0	19	8	0	13	12	0	84	846
7:50 AM	0	0	0	0	0	10	0	30	0	0	16	8	0	18	5	0	87	822
7:55 AM	0	0	0	0	0	9	0	19	0	0	11	7	0	15	8	0	69	790
8:00 AM	0	0	0	0	0	6	0	13	0	0	5	10	0	17	3	0	54	790
8:05 AM	0	0	0	0	0	13	0	24	0	0	8	13	0	15	10	0	83	
8:10 AM	0	0	0	0	0	18	0	22	0	0	9	3	0	18	9	0	79	
8:15 AM	0	0	0	0	0	13	0	21	0	0	20	6	0	15	12	0	87	
8:20 AM	0	0	0	0	0	14	0	19	0	0	14	3	0	14	5	0	69	
8:25 AM	0	0	0	0	0	11	0	22	0	0	7	5	0	9	4	0	58	
8:30 AM	0	0	0	0	0	3	0	26	0	0	10	9	0	14	13	0	75	
8:35 AM	0	0	0	0	0	2	0	12	0	0	8	5	0	12	8	0	47	
8:40 AM	0	0	0	0	0	6	0	17	0	0	13	5	0	10	3	0	54	
8:45 AM	0	0	0	0	0	9	0	18	0	0	10	8	0	10	5	0	60	
8:50 AM	0	0	0	0	0	4	0	18	0	0	9	5	0	13	6	0	55	
8:55 AM	0	0	0	0	0	10	0	13	0	0	14	6	0	12	14	0	69	
Count Total	0	0	0	0	0	210	0	460	0	0	243	165	0	324	179	0	1,581	
Peak Hour	0	0	0	0	0	120	0	259	0	0	134	84	0	179	93	0	869	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	0	0	0	0	7:05 AM	0	0	1	0	1	7:05 AM	0	0	3	0	3
7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	1	0	0	1	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	0	1	0	0	1	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	0	0	1	0	1	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	1	0	0	1	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	0	0	1	1	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	1	0	0	1	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	0	4	1	1	6	Count Total	0	0	1	0	1	Count Total	0	0	3	0	3
Peak Hour	0	1	1	0	2	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0



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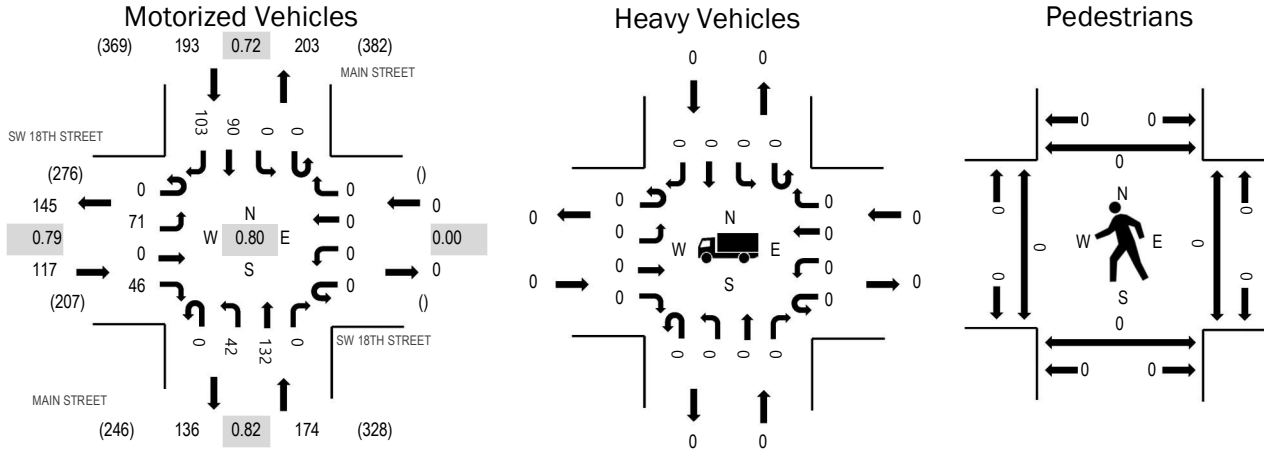
Location: 10 MAIN STREET & SW 18TH STREET AM

Date: Tuesday, July 18, 2023

Peak Hour: 07:45 AM - 08:45 AM

Peak 15-Minutes: 08:05 AM - 08:20 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.79
WB	0.0%	0.00
NB	0.0%	0.82
SB	0.0%	0.72
All	0.0%	0.80

Traffic Counts - Motorized Vehicles

Interval Start Time	SW 18TH STREET Eastbound				SW 18TH STREET Westbound				MAIN STREET Northbound				MAIN STREET Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	6	0	1	0	0	0	0	0	5	5	0	0	0	13	5	35	441
7:05 AM	0	3	0	2	0	0	0	0	0	2	9	0	0	0	5	8	29	431
7:10 AM	0	8	0	3	0	0	0	0	0	5	10	0	0	0	6	2	34	453
7:15 AM	0	8	0	3	0	0	0	0	0	6	9	0	0	0	11	9	46	470
7:20 AM	0	5	0	2	0	0	0	0	0	2	12	0	0	0	12	12	45	473
7:25 AM	0	4	0	2	0	0	0	0	0	1	16	0	0	0	4	6	33	475
7:30 AM	0	4	0	3	0	0	0	0	0	5	8	0	0	0	8	9	37	473
7:35 AM	0	10	0	0	0	0	0	0	0	4	7	0	0	0	7	6	34	478
7:40 AM	0	3	0	0	0	0	0	0	0	4	8	0	0	0	3	9	27	479
7:45 AM	0	3	0	4	0	0	0	0	0	4	21	0	0	0	10	6	48	484
7:50 AM	0	7	0	2	0	0	0	0	0	3	13	0	0	0	4	8	37	469
7:55 AM	0	8	0	2	0	0	0	0	0	4	9	0	0	0	5	8	36	457
8:00 AM	0	7	0	7	0	0	0	0	0	0	5	0	0	0	4	2	25	463
8:05 AM	0	9	0	5	0	0	0	0	0	7	8	0	0	0	8	14	51	484
8:10 AM	0	3	0	6	0	0	0	0	0	3	12	0	0	0	9	18	51	484
8:15 AM	0	6	0	3	0	0	0	0	0	5	16	0	0	0	11	8	49	484
8:20 AM	0	2	0	4	0	0	0	0	0	6	14	0	0	0	12	9	47	484
8:25 AM	0	5	0	4	0	0	0	0	0	2	6	0	0	0	6	8	31	484
8:30 AM	0	10	0	3	0	0	0	0	0	3	9	0	0	0	10	7	42	484
8:35 AM	0	3	0	2	0	0	0	0	0	5	8	0	0	0	6	11	35	484
8:40 AM	0	8	0	4	0	0	0	0	0	0	11	0	0	0	5	4	32	484
8:45 AM	0	6	0	4	0	0	0	0	0	2	10	0	0	0	3	8	33	484
8:50 AM	0	6	0	1	0	0	0	0	0	2	6	0	0	0	5	5	25	484
8:55 AM	0	5	0	1	0	0	0	0	0	5	11	0	0	0	11	9	42	484
Count Total	0	139	0	68	0	0	0	0	0	85	243	0	0	0	178	191	904	
Peak Hour	0	71	0	46	0	0	0	0	0	42	132	0	0	0	90	103	484	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	1	0	0	1	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0	7:05 AM	3	0	0	0	3
7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	1	0	0	1	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	1	0	0	1	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	0	3	0	0	3	Count Total	0	0	0	0	0	Count Total	3	0	0	0	3
Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0



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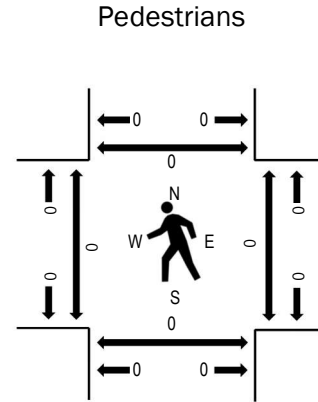
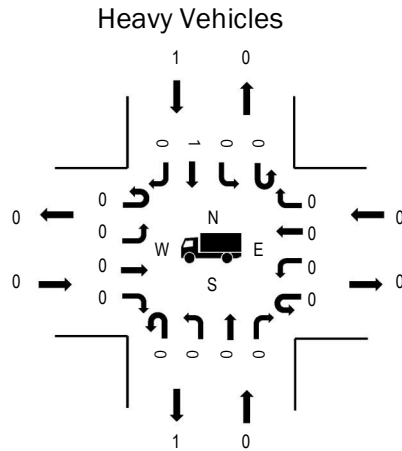
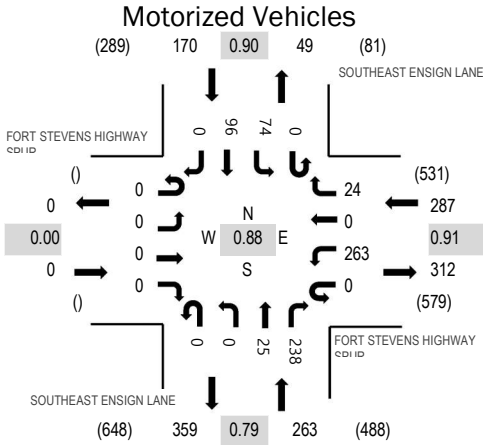
Location: 11 SOUTHEAST ENSIGN LANE & FORT STEVENS HIGHWAY SPUR AM

Date: Tuesday, July 18, 2023

Peak Hour: 07:30 AM - 08:30 AM

Peak 15-Minutes: 08:05 AM - 08:20 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.00
WB	0.0%	0.91
NB	0.0%	0.79
SB	0.6%	0.90
All	0.1%	0.88

Traffic Counts - Motorized Vehicles

Interval Start Time	FORT STEVENS HIGHWAY Spur Eastbound				FORT STEVENS HIGHWAY Spur Westbound				SOUTHEAST ENSIGN LANE Northbound				SOUTHEAST ENSIGN LANE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
	7:00 AM	0	0	0	0	0	14	0	2	0	0	1	20	0	3	4		
7:05 AM	0	0	0	0	0	21	0	1	0	0	0	21	0	7	8	0	58	671
7:10 AM	0	0	0	0	0	16	0	2	0	0	1	21	0	8	6	0	54	679
7:15 AM	0	0	0	0	0	21	0	3	0	0	1	17	0	7	8	0	57	697
7:20 AM	0	0	0	0	0	19	0	1	0	0	2	16	0	8	5	0	51	706
7:25 AM	0	0	0	0	0	24	0	3	0	0	0	15	0	1	5	0	48	704
7:30 AM	0	0	0	0	0	20	0	0	0	0	1	24	0	2	8	0	55	720
7:35 AM	0	0	0	0	0	20	0	4	0	0	2	22	0	5	6	0	59	714
7:40 AM	0	0	0	0	0	24	0	2	0	0	1	15	0	9	6	0	57	703
7:45 AM	0	0	0	0	0	21	0	1	0	0	2	15	0	8	8	0	55	692
7:50 AM	0	0	0	0	0	25	0	1	0	0	4	22	0	2	12	0	66	683
7:55 AM	0	0	0	0	0	13	0	2	0	0	0	18	0	5	11	0	49	657
8:00 AM	0	0	0	0	0	21	0	4	0	0	2	26	0	7	2	0	62	655
8:05 AM	0	0	0	0	0	20	0	1	0	0	3	25	0	7	10	0	66	
8:10 AM	0	0	0	0	0	24	0	3	0	0	0	28	0	5	12	0	72	
8:15 AM	0	0	0	0	0	28	0	4	0	0	3	18	0	9	4	0	66	
8:20 AM	0	0	0	0	0	18	0	1	0	0	3	12	0	7	8	0	49	
8:25 AM	0	0	0	0	0	29	0	1	0	0	4	13	0	8	9	0	64	
8:30 AM	0	0	0	0	0	26	0	2	0	0	2	14	0	2	3	0	49	
8:35 AM	0	0	0	0	0	16	0	1	0	0	2	20	0	3	6	0	48	
8:40 AM	0	0	0	0	0	21	0	1	0	0	1	14	0	7	2	0	46	
8:45 AM	0	0	0	0	0	19	0	1	0	0	1	17	0	3	5	0	46	
8:50 AM	0	0	0	0	0	14	0	0	0	0	1	17	0	5	3	0	40	
8:55 AM	0	0	0	0	0	15	0	1	0	0	2	19	0	2	8	0	47	
Count Total	0	0	0	0	0	489	0	42	0	0	39	449	0	130	159	0	1,308	
Peak Hour	0	0	0	0	0	263	0	24	0	0	25	238	0	74	96	0	720	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	0	0	0	7:00 AM	0	0	1	0	1	7:00 AM	0	0	0	0	0
7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	1	1	7:05 AM	0	0	0	0	0
7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0	7:25 AM	0	0	1	0	1
7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	0	0	0	1	1	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0	8:45 AM	0	1	0	0	1	8:45 AM	0	0	0	0	0
8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	0	0	0	1	1	Count Total	0	1	1	1	3	Count Total	0	0	1	0	1
Peak Hour	0	0	0	1	1	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	0	2	2	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	2	0	2	4	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	1	0	3	4	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	1	1	0	0	2	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	1	0	0	0	1	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	1	0	2	3	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	1	1	0	0	2	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	1	0	0	0	1	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	1	0	3	4	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	0	0	2	2	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	0	0	2	2	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	1	0	0	1	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	0	0	1	1	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	1	0	2	3	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	1	0	1	2	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	2	0	1	3	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	0	0	1	1	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	1	1	0	0	2	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	1	0	0	1	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	1	0	0	1	2	8:55 AM	0	1	0	0	1	8:55 AM	0	0	0	0	0
Count Total	6	14	0	23	43	Count Total	0	1	0	0	1	Count Total	0	0	0	0	0
Peak Hour	2	8	0	14	24	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	2	0	0	2	7:00 AM	1	0	0	0	1	7:00 AM	0	1	0	0	1
7:05 AM	0	0	1	1	2	7:05 AM	0	0	0	0	0	7:05 AM	0	1	0	0	1
7:10 AM	0	2	0	1	3	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	1	0	0	4	5	7:15 AM	0	0	0	0	0	7:15 AM	1	0	0	0	1
7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0	7:20 AM	0	0	1	0	1
7:25 AM	0	1	0	0	1	7:25 AM	0	0	0	0	0	7:25 AM	0	2	0	0	2
7:30 AM	0	0	0	1	1	7:30 AM	0	0	0	0	0	7:30 AM	0	1	0	0	1
7:35 AM	0	3	0	0	3	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0	7:40 AM	0	3	0	0	3
7:45 AM	0	0	0	1	1	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0	7:50 AM	0	1	0	0	1
7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	1	1
8:05 AM	0	0	0	1	1	8:05 AM	0	0	0	0	0	8:05 AM	0	1	0	0	1
8:10 AM	0	0	0	1	1	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	2	0	0	2	8:15 AM	0	0	0	0	0	8:15 AM	0	1	0	0	1
8:20 AM	0	0	0	1	1	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	0	0	1	1	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	1	0	0	1	2	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	1	0	0	1	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	1	0	0	1	2	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	1	1
8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0	8:55 AM	0	1	0	0	1
Count Total	3	11	1	14	29	Count Total	1	0	0	0	1	Count Total	1	12	1	2	16
Peak Hour	0	6	0	4	10	Peak Hour	0	0	0	0	0	Peak Hour	0	9	1	1	11



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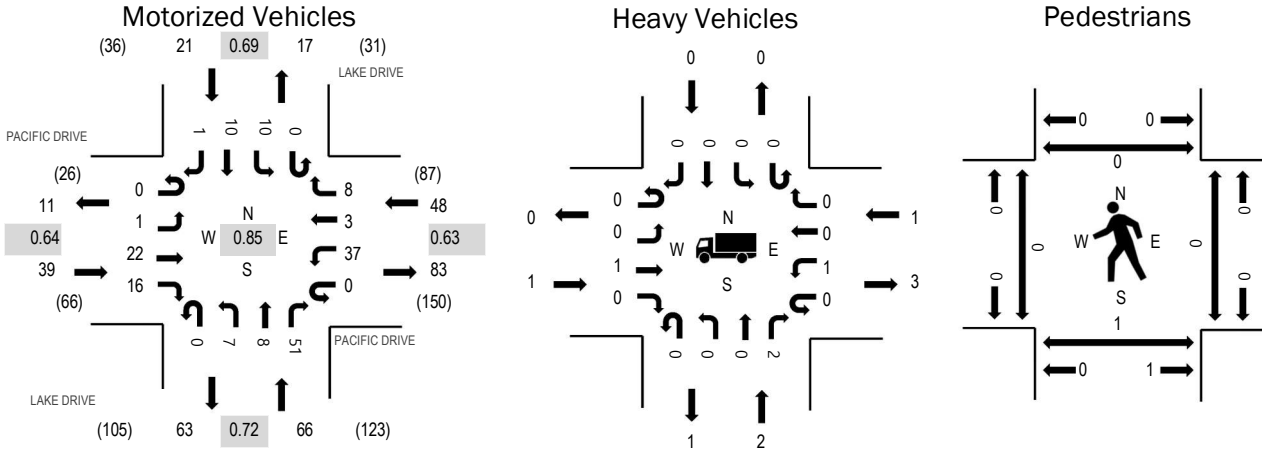
Location: 1 LAKE DRIVE & PACIFIC DRIVE PM

Date: Tuesday, July 18, 2023

Peak Hour: 04:15 PM - 05:15 PM

Peak 15-Minutes: 04:20 PM - 04:35 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	2.6%	0.64
WB	2.1%	0.63
NB	3.0%	0.72
SB	0.0%	0.69
All	2.3%	0.85

Traffic Counts - Motorized Vehicles

Interval Start Time	PACIFIC DRIVE Eastbound				PACIFIC DRIVE Westbound				LAKE DRIVE Northbound				LAKE DRIVE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	0	0	0	3	0	0	0	1	0	1	0	0	0	0	5	155
4:05 PM	0	0	0	0	0	0	1	0	0	0	0	2	0	0	1	0	4	161
4:10 PM	0	0	2	1	0	0	0	0	0	1	0	5	0	1	1	0	11	172
4:15 PM	0	0	0	1	0	2	0	1	0	0	3	3	0	1	1	0	12	174
4:20 PM	0	0	3	3	0	4	0	0	0	1	0	3	0	2	2	0	18	172
4:25 PM	0	0	2	0	0	5	0	0	0	0	0	7	0	0	1	0	15	163
4:30 PM	0	0	3	1	0	3	0	1	0	0	0	9	0	1	0	0	18	158
4:35 PM	0	1	2	1	0	3	0	1	0	1	0	6	0	0	0	0	15	151
4:40 PM	0	0	2	4	0	1	0	1	0	1	3	1	0	1	0	1	15	149
4:45 PM	0	0	2	3	0	1	0	0	0	0	1	4	0	0	3	0	14	146
4:50 PM	0	0	5	0	0	5	0	1	0	1	0	2	0	1	1	0	16	148
4:55 PM	0	0	0	0	0	3	0	3	0	2	0	3	0	1	0	0	12	145
5:00 PM	0	0	2	1	0	2	1	0	0	1	1	2	0	0	1	0	11	157
5:05 PM	0	0	1	1	0	5	0	0	0	0	0	5	0	2	1	0	15	
5:10 PM	0	0	0	1	0	3	2	0	0	0	0	6	0	1	0	0	13	
5:15 PM	0	0	2	1	0	2	0	0	0	0	0	4	0	1	0	0	10	
5:20 PM	0	0	2	0	0	2	1	0	0	1	0	3	0	0	0	0	9	
5:25 PM	0	1	3	0	0	2	0	0	0	1	0	2	0	1	0	0	10	
5:30 PM	0	0	2	1	0	2	0	0	0	0	0	6	0	0	0	0	11	
5:35 PM	0	0	2	0	0	0	1	1	0	1	3	4	0	1	0	0	13	
5:40 PM	0	0	0	2	0	2	2	1	0	0	0	2	0	1	2	0	12	
5:45 PM	0	1	1	1	0	4	1	0	0	0	2	4	0	1	1	0	16	
5:50 PM	0	0	1	0	0	6	0	1	0	2	1	0	0	2	0	0	13	
5:55 PM	0	1	1	2	0	5	1	1	0	1	1	9	0	1	1	0	24	
Count Total	0	4	38	24	0	65	10	12	0	15	15	93	0	19	16	1	312	
Peak Hour	0	1	22	16	0	37	3	8	0	7	8	51	0	10	10	1	174	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	1	0	0	1	4:10 PM	0	0	0	0	0	4:10 PM	0	0	1	0	1
4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	1	0	0	1	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	1	1	0	2	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	1	0	0	0	1	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	1	1	4:55 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0	5:05 PM	0	1	0	0	1
5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0	5:25 PM	0	1	0	0	1
5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	1	1	5:30 PM	0	0	0	0	0
5:35 PM	0	1	0	0	1	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	2	0	0	0	2	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	2	2	5:55 PM	2	1	0	0	3
Count Total	1	4	1	0	6	Count Total	2	0	0	4	6	Count Total	2	3	1	0	6
Peak Hour	1	2	1	0	4	Peak Hour	0	0	0	1	1	Peak Hour	0	1	0	0	1



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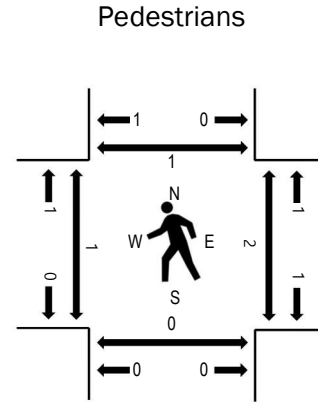
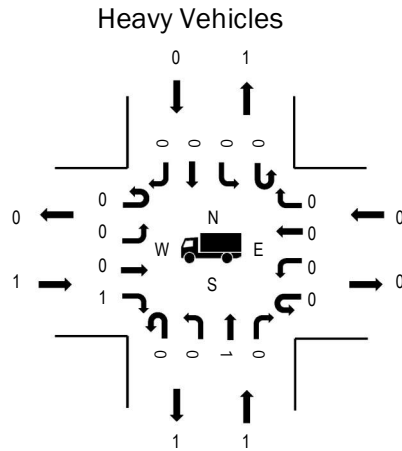
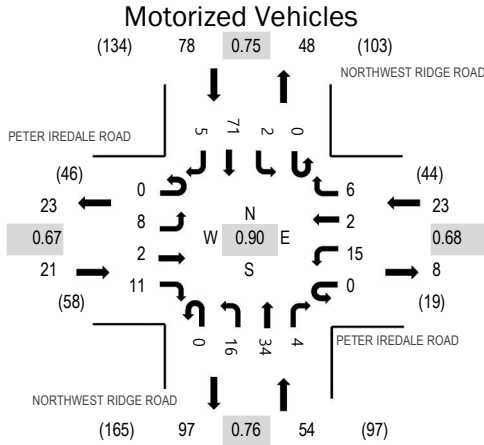
Location: 2 NORTHWEST RIDGE ROAD & PETER IREDALE ROAD PM

Date: Tuesday, July 18, 2023

Peak Hour: 04:20 PM - 05:20 PM

Peak 15-Minutes: 04:20 PM - 04:35 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	4.8%	0.67
WB	0.0%	0.68
NB	1.9%	0.76
SB	0.0%	0.75
All	1.1%	0.90

Traffic Counts - Motorized Vehicles

Interval Start Time	PETER IREDALE ROAD Eastbound				PETER IREDALE ROAD Westbound				NORTHWEST RIDGE ROAD Northbound				NORTHWEST RIDGE ROAD Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	0	0	0	1	0	0	0	0	3	0	0	0	2	0	6	159
4:05 PM	0	2	0	1	0	0	1	1	0	0	1	0	0	0	5	0	11	161
4:10 PM	0	2	0	2	0	1	0	0	0	1	2	0	0	1	3	0	12	168
4:15 PM	0	1	0	1	0	1	0	0	0	1	2	0	0	0	3	0	9	173
4:20 PM	0	1	0	1	0	1	0	0	0	1	3	0	0	1	12	2	22	176
4:25 PM	0	1	0	1	0	0	0	0	0	0	2	0	0	0	7	0	11	164
4:30 PM	0	0	0	2	0	3	0	1	0	0	6	0	0	0	4	0	16	164
4:35 PM	0	0	0	1	0	0	0	1	0	0	1	0	0	0	5	0	8	165
4:40 PM	0	2	0	1	0	0	0	0	0	0	5	1	0	0	6	1	16	164
4:45 PM	0	0	1	0	0	1	0	0	0	2	2	0	0	0	7	0	13	162
4:50 PM	0	0	0	0	0	3	0	0	0	3	3	0	0	0	5	0	14	165
4:55 PM	0	1	1	1	0	1	0	1	0	5	3	0	0	1	6	1	21	169
5:00 PM	0	0	0	1	0	1	0	0	0	0	1	0	0	0	4	1	8	174
5:05 PM	0	0	0	1	0	2	2	1	0	2	3	0	0	0	7	0	18	
5:10 PM	0	2	0	2	0	1	0	2	0	3	2	2	0	0	3	0	17	
5:15 PM	0	1	0	0	0	2	0	0	0	0	3	1	0	0	5	0	12	
5:20 PM	0	1	0	1	0	1	0	0	0	1	3	0	0	1	1	1	10	
5:25 PM	0	4	0	0	0	3	0	0	0	1	0	0	0	0	2	1	11	
5:30 PM	0	4	0	3	0	0	0	0	0	1	5	0	0	1	3	0	17	
5:35 PM	0	0	0	1	0	1	0	0	0	0	2	1	0	0	2	0	7	
5:40 PM	0	2	0	1	0	1	0	1	0	1	2	0	0	1	5	0	14	
5:45 PM	0	0	0	3	0	1	0	1	0	1	4	0	0	1	5	0	16	
5:50 PM	0	4	0	1	0	0	1	1	0	2	1	0	0	0	5	3	18	
5:55 PM	0	2	0	1	0	3	1	1	0	3	3	2	0	3	4	3	26	
Count Total	0	30	2	26	0	28	5	11	0	28	62	7	0	10	111	13	333	
Peak Hour	0	8	2	11	0	15	2	6	0	16	34	4	0	2	71	5	176	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	1	1	4:10 PM	1	0	0	1	2
4:15 PM	0	2	0	0	2	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	1	1	0	0	2	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	1	1
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	1	0	0	0	1
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0	4:50 PM	0	0	2	0	2
4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	1	1	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	0	0	0	0	5:10 PM	0	2	0	0	2	5:10 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	1	0	0	1	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	0	0	5:25 PM	1	0	0	0	1	5:25 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0	5:30 PM	1	0	0	0	1	5:30 PM	0	0	0	2	2
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	1	1
5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	0	0	5:50 PM	1	0	0	0	1	5:50 PM	0	0	0	2	2
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	2	2
Count Total	1	4	0	0	5	Count Total	3	2	0	2	7	Count Total	2	0	2	9	13
Peak Hour	1	1	0	0	2	Peak Hour	0	2	0	1	3	Peak Hour	1	0	2	1	4



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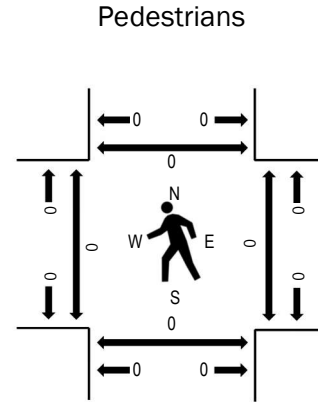
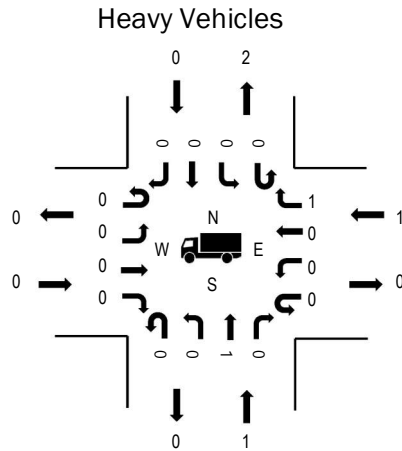
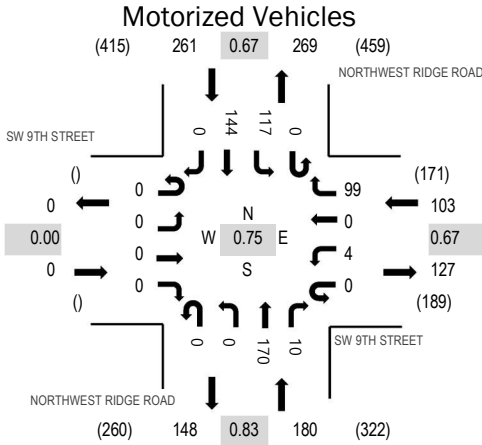
Location: 3 NORTHWEST RIDGE ROAD & SW 9TH STREET PM

Date: Tuesday, July 18, 2023

Peak Hour: 04:45 PM - 05:45 PM

Peak 15-Minutes: 05:05 PM - 05:20 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.00
WB	1.0%	0.67
NB	0.6%	0.83
SB	0.0%	0.67
All	0.4%	0.75

Traffic Counts - Motorized Vehicles

Interval Start Time	SW 9TH STREET Eastbound				SW 9TH STREET Westbound				NORTHWEST RIDGE ROAD Northbound				NORTHWEST RIDGE ROAD Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	0	0	0	1	0	6	0	0	13	0	0	5	8	0	33	405
4:05 PM	0	0	0	0	0	1	0	5	0	0	12	2	0	4	4	0	28	407
4:10 PM	0	0	0	0	0	1	0	3	0	0	8	2	0	1	8	0	23	446
4:15 PM	0	0	0	0	0	1	0	4	0	0	13	0	0	1	13	0	32	497
4:20 PM	0	0	0	0	0	1	0	1	0	0	19	1	0	3	6	0	31	506
4:25 PM	0	0	0	0	0	2	0	3	0	0	9	1	0	8	7	0	30	521
4:30 PM	0	0	0	0	0	1	0	7	0	0	10	1	0	6	11	0	36	535
4:35 PM	0	0	0	0	0	0	0	11	0	0	16	0	0	6	8	0	41	531
4:40 PM	0	0	0	0	0	0	0	10	0	0	9	2	0	7	4	0	32	538
4:45 PM	0	0	0	0	0	0	0	12	0	0	14	1	0	3	10	0	40	544
4:50 PM	0	0	0	0	0	2	0	17	0	0	13	1	0	1	6	0	40	536
4:55 PM	0	0	0	0	0	1	0	12	0	0	9	3	0	5	9	0	39	520
5:00 PM	0	0	0	0	0	0	0	10	0	0	10	0	0	4	11	0	35	503
5:05 PM	0	0	0	0	0	0	0	4	0	0	16	1	0	26	20	0	67	
5:10 PM	0	0	0	0	0	0	0	12	0	0	20	1	0	30	11	0	74	
5:15 PM	0	0	0	0	0	0	0	8	0	0	15	2	0	6	10	0	41	
5:20 PM	0	0	0	0	0	0	0	6	0	0	16	1	0	11	12	0	46	
5:25 PM	0	0	0	0	0	0	0	2	0	0	19	0	0	10	13	0	44	
5:30 PM	0	0	0	0	0	1	0	5	0	0	10	0	0	2	14	0	32	
5:35 PM	0	0	0	0	0	0	0	7	0	0	19	0	0	7	15	0	48	
5:40 PM	0	0	0	0	0	0	0	4	0	0	9	0	0	12	13	0	38	
5:45 PM	0	0	0	0	0	1	0	3	0	0	6	0	0	6	16	0	32	
5:50 PM	0	0	0	0	0	0	0	2	0	0	9	1	0	2	10	0	24	
5:55 PM	0	0	0	0	0	0	0	4	0	0	7	1	0	2	8	0	22	
Count Total	0	0	0	0	0	13	0	158	0	0	301	21	0	168	247	0	908	
Peak Hour	0	0	0	0	0	4	0	99	0	0	170	10	0	117	144	0	544	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	1	0	0	1	4:00 PM	0	1	0	0	1	4:00 PM	0	0	0	0	0
4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0	4:15 PM	0	0	1	0	1	4:15 PM	0	0	0	0	0
4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	1	0	1	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	1	0	1	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	0	0	0	5:20 PM	0	0	1	0	1	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	1	0	0	1	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	1	1
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	0	2	2	0	4	Count Total	0	1	2	0	3	Count Total	0	0	0	1	1
Peak Hour	0	1	1	0	2	Peak Hour	0	0	1	0	1	Peak Hour	0	0	0	0	0

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	1	0	0	1	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	0	1	0	0	1	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	0	1	0	0	1	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0



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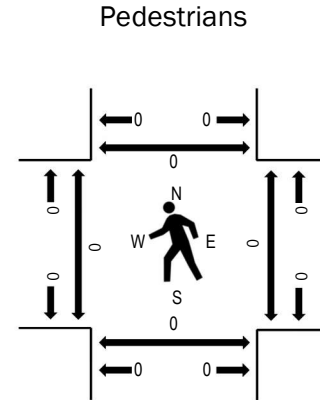
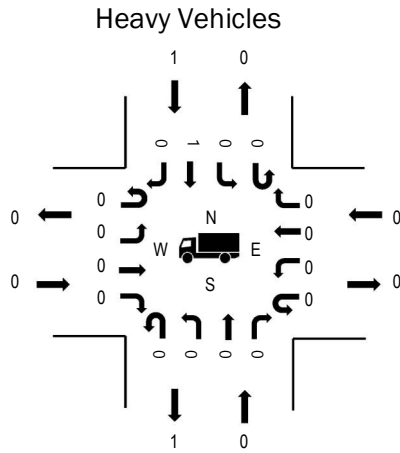
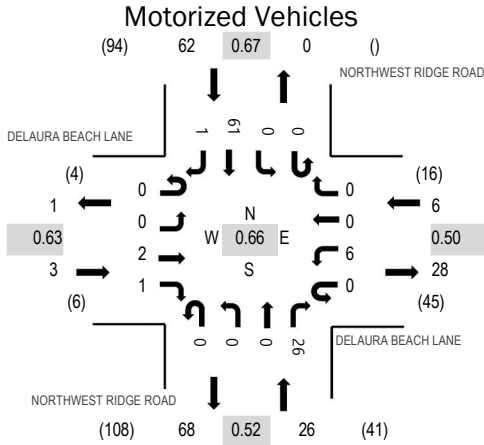
Location: 5 NORTHWEST RIDGE ROAD & DELAURA BEACH LANE PM

Date: Tuesday, July 18, 2023

Peak Hour: 04:10 PM - 05:10 PM

Peak 15-Minutes: 04:30 PM - 04:45 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.63
WB	0.0%	0.50
NB	0.0%	0.52
SB	1.6%	0.67
All	1.0%	0.66

Traffic Counts - Motorized Vehicles

Interval Start Time	DELAURA BEACH LANE Eastbound				DELAURA BEACH LANE Westbound				NORTHWEST RIDGE ROAD Northbound				NORTHWEST RIDGE ROAD Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	0	0	0	1	0	0	0	0	0	2	0	0	1	0	4	93
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	3	93
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	5	0	7	97
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	6	0	8	96
4:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	92
4:25 PM	0	0	1	0	0	0	0	0	0	0	0	2	0	0	3	0	6	96
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	5	0	0	7	0	12	96
4:35 PM	0	0	0	0	0	0	0	0	0	0	0	6	0	0	9	0	15	89
4:40 PM	0	0	0	0	0	2	0	0	0	0	0	1	0	0	6	1	10	75
4:45 PM	0	0	1	0	0	1	0	0	0	0	0	2	0	0	6	0	10	70
4:50 PM	0	0	0	1	0	0	0	0	0	0	0	2	0	0	7	0	10	66
4:55 PM	0	0	0	0	0	2	0	0	0	0	0	2	0	0	2	0	6	64
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	0	4	64
5:05 PM	0	0	0	0	0	1	0	0	0	0	0	1	0	0	5	0	7	
5:10 PM	0	0	1	0	0	0	0	0	0	0	0	1	0	0	4	0	6	
5:15 PM	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2	0	4	
5:20 PM	0	0	0	0	0	1	0	0	0	0	0	1	0	0	3	1	6	
5:25 PM	0	0	1	0	0	1	0	0	0	1	0	1	0	0	2	0	6	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3	0	5	
5:35 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	
5:45 PM	0	0	0	0	0	4	0	0	0	0	0	0	0	0	2	0	6	
5:50 PM	0	0	0	0	0	2	0	0	0	0	0	2	0	0	3	1	8	
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	6	
Count Total	0	0	5	1	0	16	0	0	0	1	0	40	0	0	91	3	157	
Peak Hour	0	0	2	1	0	6	0	0	0	0	0	26	0	0	61	1	97	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	0	1	1	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	0	0	0	1	1	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	0	0	0	1	1	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0



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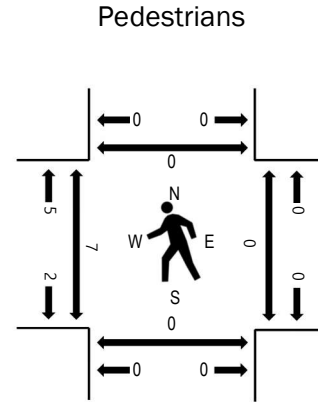
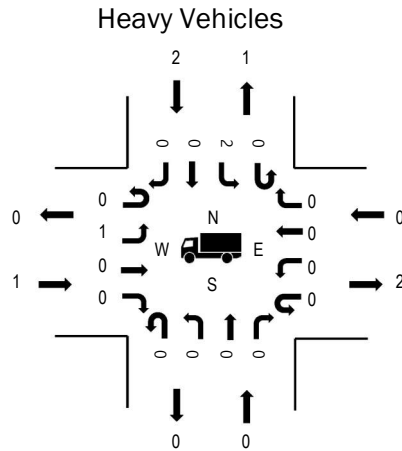
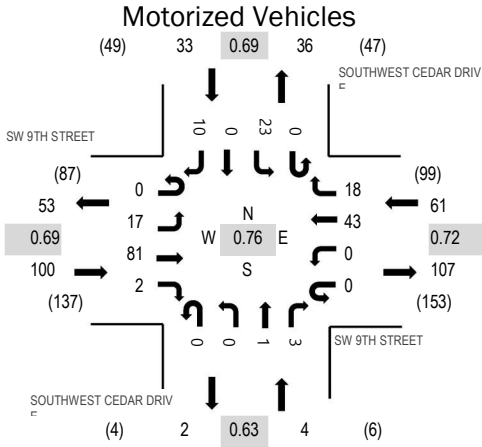
Location: 6 SOUTHWEST CEDAR DRIVE & SW 9TH STREET PM

Date: Tuesday, July 18, 2023

Peak Hour: 04:20 PM - 05:20 PM

Peak 15-Minutes: 04:40 PM - 04:55 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	1.0%	0.69
WB	0.0%	0.72
NB	0.0%	0.63
SB	6.1%	0.69
All	1.5%	0.76

Traffic Counts - Motorized Vehicles

Interval Start Time	SW 9TH STREET Eastbound				SW 9TH STREET Westbound				SOUTHWEST CEDAR DRIVE Northbound				SOUTHWEST CEDAR DRIVE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2	165
4:05 PM	0	1	2	0	0	0	3	1	0	0	0	0	0	0	0	0	7	177
4:10 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	1	5	185
4:15 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	1	0	0	4	192
4:20 PM	0	1	7	0	0	0	5	1	0	0	0	0	0	3	0	0	17	198
4:25 PM	0	4	3	1	0	0	5	3	0	0	0	0	0	2	0	1	19	191
4:30 PM	0	2	6	0	0	0	6	2	0	0	0	2	0	2	0	1	21	176
4:35 PM	0	0	9	0	0	0	2	0	0	0	0	0	0	1	0	1	13	160
4:40 PM	0	2	11	0	0	0	2	2	0	0	0	0	0	1	0	2	20	157
4:45 PM	0	2	11	0	0	0	5	1	0	0	0	1	0	3	0	2	25	144
4:50 PM	0	2	8	0	0	0	6	0	0	0	0	0	0	2	0	2	20	128
4:55 PM	0	0	4	0	0	0	4	2	0	0	0	0	0	2	0	0	12	129
5:00 PM	0	0	7	0	0	0	2	2	0	0	1	0	0	2	0	0	14	126
5:05 PM	0	2	5	0	0	0	4	2	0	0	0	0	0	2	0	0	15	
5:10 PM	0	1	4	0	0	0	2	3	0	0	0	0	0	2	0	0	12	
5:15 PM	0	1	6	1	0	0	0	0	0	0	0	0	0	1	0	1	10	
5:20 PM	0	0	4	0	0	1	4	0	0	0	0	0	0	1	0	0	10	
5:25 PM	0	0	2	0	0	0	0	1	0	1	0	0	0	0	0	0	4	
5:30 PM	0	1	1	0	0	0	2	0	0	0	0	0	0	1	0	0	5	
5:35 PM	0	0	6	0	0	0	1	0	0	0	0	0	0	2	1	0	10	
5:40 PM	0	0	2	0	0	0	2	1	0	0	0	0	0	1	0	1	7	
5:45 PM	0	0	3	0	0	0	3	1	0	0	0	0	0	1	0	1	9	
5:50 PM	0	1	9	0	0	0	4	3	0	1	0	0	0	3	0	0	21	
5:55 PM	0	0	1	0	0	0	6	1	0	0	0	0	0	1	0	0	9	
Count Total	0	20	115	2	0	1	72	26	0	2	1	3	0	35	1	13	291	
Peak Hour	0	17	81	2	0	0	43	18	0	0	1	3	0	23	0	10	198	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	0	1	1	2	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0	4:30 PM	2	0	0	0	2
4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	1	0	0	0	1	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	0	0	2	2	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0	4:55 PM	5	0	0	0	5
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	0	0	5:25 PM	1	0	0	0	1	5:25 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	1	0	1	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	1	1	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	1	0	2	4	7	Count Total	1	0	0	0	1	Count Total	7	0	0	0	7
Peak Hour	1	0	0	2	3	Peak Hour	0	0	0	0	0	Peak Hour	7	0	0	0	7



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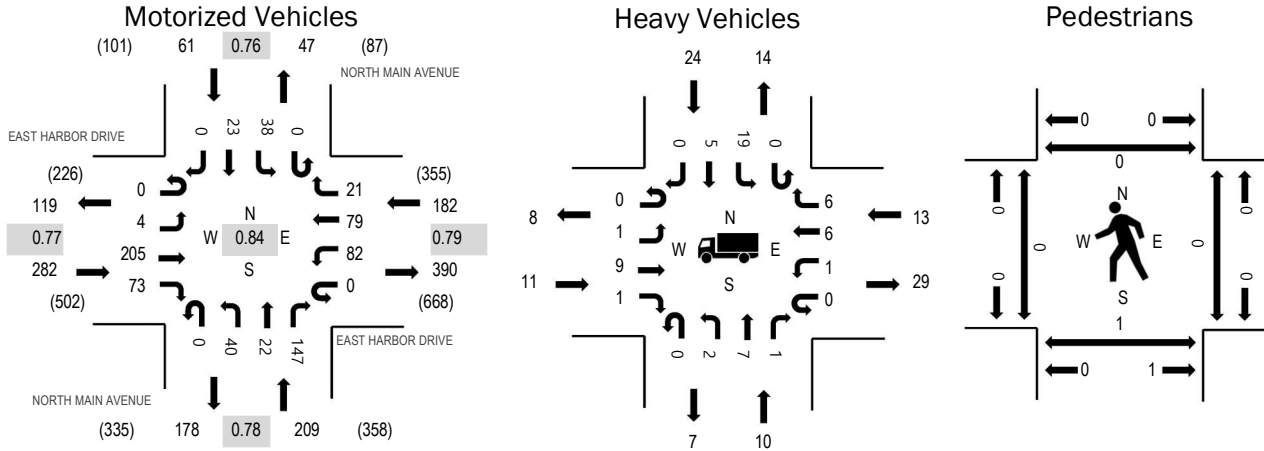
Location: 7 NORTH MAIN AVENUE & EAST HARBOR DRIVE PM

Date: Tuesday, July 18, 2023

Peak Hour: 04:30 PM - 05:30 PM

Peak 15-Minutes: 04:45 PM - 05:00 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	3.9%	0.77
WB	7.1%	0.79
NB	4.8%	0.78
SB	39.3%	0.76
All	7.9%	0.84

Traffic Counts - Motorized Vehicles

Interval Start Time	EAST HARBOR DRIVE				EAST HARBOR DRIVE				NORTH MAIN AVENUE				NORTH MAIN AVENUE				Total	Rolling Hour
	Eastbound				Westbound				Northbound				Southbound					
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	10	4	0	4	3	2	0	1	0	5	0	1	0	0	30	662
4:05 PM	0	0	11	6	0	3	6	5	0	2	1	6	0	0	1	0	41	679
4:10 PM	0	0	8	7	0	6	3	4	0	2	1	8	0	2	2	0	43	694
4:15 PM	0	0	16	6	0	5	5	0	0	3	1	6	0	4	2	0	48	713
4:20 PM	0	0	12	5	0	2	4	3	0	2	1	7	0	4	1	0	41	713
4:25 PM	0	0	15	6	0	9	4	2	0	4	3	6	0	1	0	0	50	729
4:30 PM	0	0	18	3	0	6	8	2	0	2	0	7	0	6	3	0	55	734
4:35 PM	0	2	28	9	0	5	3	1	0	3	4	16	0	4	2	0	77	721
4:40 PM	0	1	19	5	0	4	8	2	0	5	1	8	0	3	3	0	59	701
4:45 PM	0	0	21	7	0	7	8	2	0	6	1	21	0	2	4	0	79	699
4:50 PM	0	0	20	8	0	9	9	2	0	3	2	15	0	6	0	0	74	673
4:55 PM	0	0	20	9	0	5	4	3	0	2	6	12	0	1	3	0	65	664
5:00 PM	0	1	8	6	0	6	5	1	0	3	1	10	0	4	2	0	47	654
5:05 PM	0	0	9	8	0	14	6	1	0	1	3	12	0	2	0	0	56	
5:10 PM	0	0	16	3	0	7	7	4	0	5	1	12	0	6	1	0	62	
5:15 PM	0	0	12	3	0	8	8	1	0	1	2	8	0	2	3	0	48	
5:20 PM	0	0	16	8	0	7	9	1	0	1	0	14	0	1	0	0	57	
5:25 PM	0	0	18	4	0	4	4	1	0	8	1	12	0	1	2	0	55	
5:30 PM	0	0	17	1	0	4	6	0	0	2	1	8	0	3	0	0	42	
5:35 PM	0	0	18	7	0	11	4	2	0	1	2	8	0	2	1	1	57	
5:40 PM	0	0	15	7	0	5	8	1	0	6	2	11	0	1	1	0	57	
5:45 PM	0	0	13	4	0	8	9	2	0	2	1	11	0	2	1	0	53	
5:50 PM	0	0	12	8	0	11	6	6	0	6	0	9	0	3	4	0	65	
5:55 PM	0	0	6	6	0	8	12	0	0	4	0	16	0	1	1	1	55	
Count Total	0	4	358	140	0	158	149	48	0	75	35	248	0	62	37	2	1,316	
Peak Hour	0	4	205	73	0	82	79	21	0	40	22	147	0	38	23	0	734	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	0	1	0	1	4:05 PM	1	0	0	0	1	4:05 PM	0	0	0	0	0
4:10 PM	0	0	3	0	3	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	0	0	3	3	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	0	0	1	1	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	1	1	0	2	4:25 PM	0	0	0	0	0	4:25 PM	0	1	0	0	1
4:30 PM	1	0	0	2	3	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	1	2	1	3	7	4:35 PM	0	0	0	0	0	4:35 PM	0	0	1	0	1
4:40 PM	0	1	1	2	4	4:40 PM	0	1	0	0	1	4:40 PM	0	1	0	0	1
4:45 PM	1	0	2	1	4	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	1	0	2	3	6	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	2	2	0	1	5	4:55 PM	0	0	1	0	1	4:55 PM	0	0	0	0	0
5:00 PM	0	0	0	2	2	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	2	1	1	1	5	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	1	3	4	8	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	1	1	2	3	7	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	1	0	0	1	2	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	1	2	1	1	5	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	1	1	1	2	5	5:30 PM	0	0	0	0	0	5:30 PM	0	0	1	0	1
5:35 PM	1	0	0	1	2	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	1	1	0	2	5:40 PM	1	0	0	0	1	5:40 PM	0	1	0	0	1
5:45 PM	2	0	1	1	4	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	4	2	6	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	2	1	3	5:55 PM	0	0	6	0	6	5:55 PM	4	0	0	0	4
Count Total	15	13	27	35	90	Count Total	2	1	7	0	10	Count Total	4	3	2	0	9
Peak Hour	11	10	13	24	58	Peak Hour	0	1	1	0	2	Peak Hour	0	1	1	0	2



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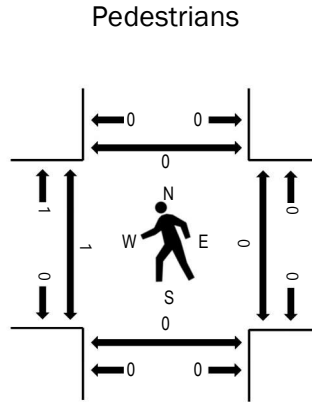
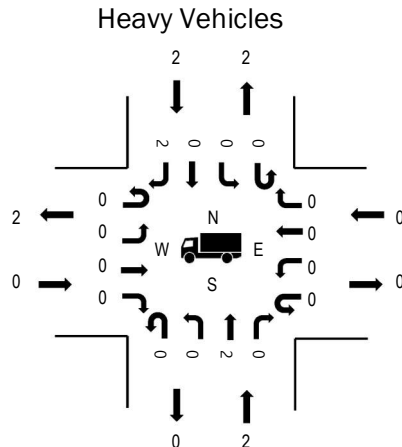
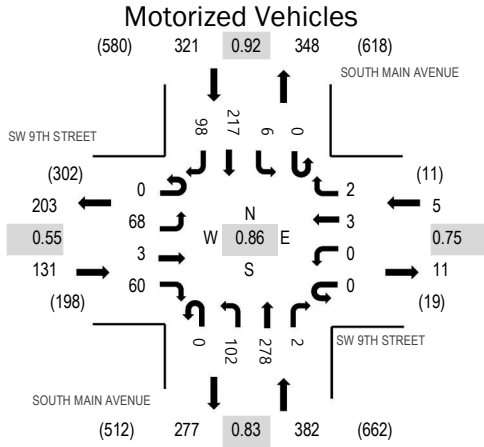
Location: 8 SOUTH MAIN AVENUE & SW 9TH STREET PM

Date: Tuesday, July 18, 2023

Peak Hour: 04:30 PM - 05:30 PM

Peak 15-Minutes: 05:10 PM - 05:25 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.55
WB	0.0%	0.75
NB	0.5%	0.83
SB	0.6%	0.92
All	0.5%	0.86

Traffic Counts - Motorized Vehicles

Interval Start Time	SW 9TH STREET Eastbound				SW 9TH STREET Westbound				SOUTH MAIN AVENUE Northbound				SOUTH MAIN AVENUE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	1	0	3	0	0	0	1	0	2	16	0	1	0	16	8	48	720
4:05 PM	0	2	0	4	0	0	0	0	0	6	21	0	0	0	22	7	62	724
4:10 PM	0	3	0	1	0	0	1	0	0	4	20	0	0	1	18	6	54	723
4:15 PM	0	2	1	0	0	0	0	0	0	2	13	0	0	0	17	1	36	755
4:20 PM	0	2	0	1	0	0	0	1	0	3	16	0	0	1	19	7	50	806
4:25 PM	0	5	0	2	0	0	0	0	0	5	20	0	0	0	15	4	51	828
4:30 PM	0	6	0	3	0	0	0	0	0	10	26	1	0	1	21	6	74	839
4:35 PM	0	2	0	4	0	0	1	0	0	7	17	0	0	1	21	9	62	828
4:40 PM	0	2	0	4	0	0	1	0	0	14	18	0	0	2	11	7	59	813
4:45 PM	0	4	0	7	0	0	0	0	0	8	27	0	0	2	18	16	82	801
4:50 PM	0	1	1	2	0	0	0	0	0	23	25	0	0	0	19	3	74	770
4:55 PM	0	3	0	6	0	0	1	0	0	6	24	0	0	0	17	11	68	744
5:00 PM	0	4	0	0	0	0	0	0	0	7	14	0	0	0	21	6	52	731
5:05 PM	0	5	0	10	0	0	0	1	0	4	18	0	0	0	15	8	61	
5:10 PM	0	17	1	7	0	0	0	0	0	7	20	1	0	0	24	9	86	
5:15 PM	0	10	0	10	0	0	0	0	0	6	37	0	0	0	13	11	87	
5:20 PM	0	7	0	4	0	0	0	1	0	6	26	0	0	0	24	4	72	
5:25 PM	0	7	1	3	0	0	0	0	0	4	26	0	0	0	13	8	62	
5:30 PM	0	3	0	4	0	0	0	0	0	5	26	0	0	0	22	3	63	
5:35 PM	0	3	0	2	0	0	0	1	0	4	18	0	0	0	16	3	47	
5:40 PM	0	5	0	6	0	0	0	0	0	4	23	0	0	0	8	1	47	
5:45 PM	0	5	1	3	0	0	1	0	0	4	20	1	0	1	12	3	51	
5:50 PM	0	2	0	2	0	0	1	0	0	2	23	0	0	1	14	3	48	
5:55 PM	0	0	0	4	0	0	0	0	0	4	17	1	0	0	24	5	55	
Count Total	0	101	5	92	0	0	6	5	0	147	511	4	1	10	420	149	1,451	
Peak Hour	0	68	3	60	0	0	3	2	0	102	278	2	0	6	217	98	839	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	0	0	0	0	4:00 PM	3	0	0	0	3	4:00 PM	0	2	0	0	2
4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	2	2	4:05 PM	1	0	0	0	1
4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0	4:10 PM	0	0	1	1	2
4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0	4:30 PM	1	0	0	1	2	4:30 PM	0	0	0	1	1
4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	1	0	0	1	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	1	0	0	1	4:55 PM	0	0	0	0	0	4:55 PM	3	0	0	0	3
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	0	0	1	1	5:10 PM	0	0	0	0	0	5:10 PM	1	0	0	0	1
5:15 PM	0	0	0	1	1	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	1	1	5:25 PM	2	0	0	0	2
5:30 PM	0	0	0	1	1	5:30 PM	0	0	0	0	0	5:30 PM	0	0	1	0	1
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	1	0	0	1	2
5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	1	0	0	1	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	0	3	0	3	6	Count Total	4	0	0	4	8	Count Total	8	2	2	3	15
Peak Hour	0	2	0	2	4	Peak Hour	1	0	0	2	3	Peak Hour	6	0	0	1	7

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	1	0	0	1	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	1	0	0	1	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	0	0	3	3	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	1	0	0	1	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	1	0	1	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	2	0	0	2	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	1	1	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	2	0	2	4	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	0	2	2	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	1	0	1	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	1	1	0	2	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	0	2	2	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	0	1	1	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	2	0	0	2	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	1	0	0	1	5:30 PM	0	0	0	1	1	5:30 PM	0	0	0	0	0
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	1	0	0	1	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	1	0	1	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	0	12	4	11	27	Count Total	0	0	0	1	1	Count Total	0	0	0	0	0
Peak Hour	0	8	2	8	18	Peak Hour	0	0	0	1	1	Peak Hour	0	0	0	0	0

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	0	0	1	1	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	0	0	3	3	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	1	0	0	1	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	2	0	0	2	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	2	0	1	3	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	1	0	0	1	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	0	2	2	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	0	1	1	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	1	0	0	1	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	1	1	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	0	7	0	9	16	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	0	6	0	3	9	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	1	1	4:10 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	1	0	1	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	1	0	0	1	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	1	0	1	2	5:00 PM	0	0	1	1	2	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	0	0	1	1	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0	5:30 PM	0	1	0	0	1	5:30 PM	0	0	0	0	0
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	1	1	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	1	0	1	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	0	2	2	3	7	Count Total	0	1	1	2	4	Count Total	0	0	0	0	0
Peak Hour	0	2	0	2	4	Peak Hour	0	1	1	1	3	Peak Hour	0	0	0	0	0

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	1	1	0	1	3	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	1	0	0	1	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	1	2	0	4	7	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	0	0	2	2	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	0	0	1	1	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	1	0	3	4	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	1	1	0	0	2	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	3	1	0	5	9	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	3	3	0	1	7	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	2	0	0	3	5	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	3	0	0	2	5	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	1	3	0	3	7	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	2	1	0	4	7	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	1	1	0	2	4	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	2	0	0	2	4	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	3	0	0	1	4	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	3	0	0	2	5	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	3	0	2	5	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	3	2	0	1	6	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	1	0	0	2	3	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	2	1	0	2	5	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	2	0	0	3	5	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	4	3	0	2	9	5:50 PM	0	0	0	6	6	5:50 PM	0	0	0	0	0
5:55 PM	1	1	0	3	5	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	39	25	0	51	115	Count Total	0	0	0	6	6	Count Total	0	0	0	0	0
Peak Hour	24	13	0	25	62	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0



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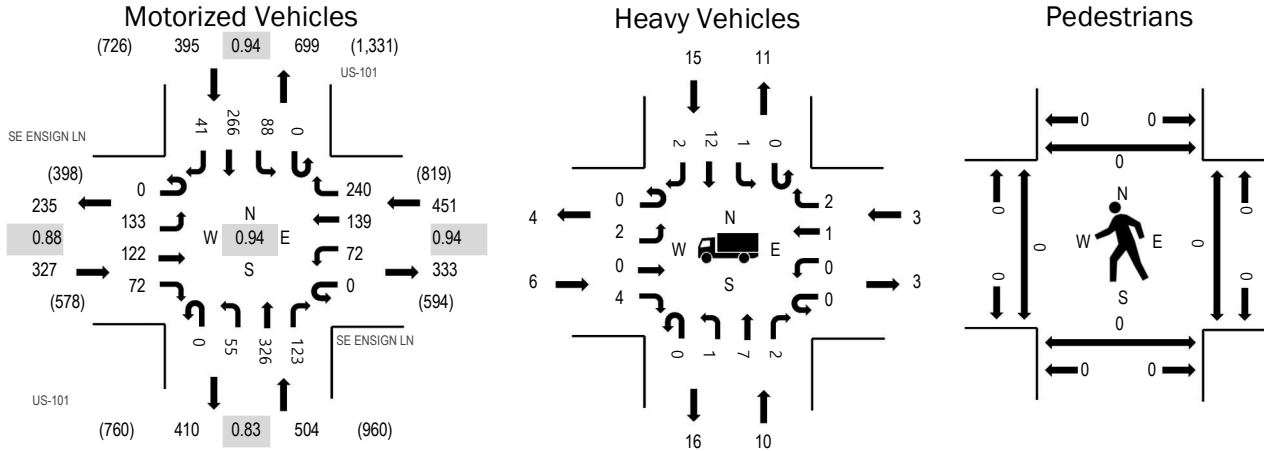
Location: 13 US-101 & SE ENSIGN LN PM

Date: Tuesday, July 18, 2023

Peak Hour: 04:35 PM - 05:35 PM

Peak 15-Minutes: 04:35 PM - 04:50 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	1.8%	0.88
WB	0.7%	0.94
NB	2.0%	0.83
SB	3.8%	0.94
All	2.0%	0.94

Traffic Counts - Motorized Vehicles

Interval Start Time	SE ENSIGN LN Eastbound				SE ENSIGN LN Westbound				US-101 Northbound				US-101 Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	8	1	3	0	1	7	24	0	3	12	2	0	1	8	1	71	1,421
4:05 PM	0	12	7	5	0	1	5	21	0	4	20	9	0	9	15	1	109	1,488
4:10 PM	0	9	8	4	0	7	2	12	0	3	20	7	0	5	25	0	102	1,495
4:15 PM	0	11	2	1	0	7	5	25	0	2	15	10	0	1	16	1	96	1,532
4:20 PM	0	8	6	1	0	8	8	23	0	1	24	9	0	3	16	0	107	1,571
4:25 PM	0	16	8	2	0	4	5	15	0	4	31	5	0	2	22	2	116	1,602
4:30 PM	0	9	5	5	0	3	2	20	0	4	16	9	0	8	19	1	101	1,634
4:35 PM	0	16	12	7	0	3	9	24	0	0	24	8	0	10	24	7	144	1,677
4:40 PM	0	17	8	5	0	4	12	12	0	4	44	10	0	5	21	5	147	1,663
4:45 PM	0	7	5	5	0	8	21	21	0	5	30	14	0	8	28	2	154	1,672
4:50 PM	0	9	18	5	0	8	15	16	0	7	27	10	0	5	15	0	135	1,668
4:55 PM	0	7	10	8	0	3	9	19	0	7	27	15	0	9	25	0	139	1,648
5:00 PM	0	9	9	6	0	8	12	20	0	4	22	12	0	7	26	3	138	1,662
5:05 PM	0	7	14	4	0	4	9	26	0	2	23	3	0	5	13	6	116	
5:10 PM	0	15	4	4	0	5	10	24	0	1	25	12	0	6	28	5	139	
5:15 PM	0	10	7	10	0	6	9	14	0	4	31	10	0	10	20	4	135	
5:20 PM	0	12	12	5	0	3	9	18	0	12	22	10	0	10	21	4	138	
5:25 PM	0	15	16	6	0	8	16	24	0	4	17	12	0	5	23	2	148	
5:30 PM	0	9	7	7	0	12	8	22	0	5	34	7	0	8	22	3	144	
5:35 PM	0	12	7	8	0	1	8	16	0	3	29	9	0	7	25	5	130	
5:40 PM	0	8	7	3	0	10	12	18	0	11	32	17	0	5	28	5	156	
5:45 PM	0	16	10	5	0	7	7	18	0	8	31	17	0	7	15	9	150	
5:50 PM	0	12	8	7	0	6	4	11	0	6	22	9	0	6	20	4	115	
5:55 PM	0	9	6	2	0	11	10	24	0	7	23	22	0	7	29	3	153	
Count Total	0	263	197	118	0	138	214	467	0	111	601	248	0	149	504	73	3,083	
Peak Hour	0	133	122	72	0	72	139	240	0	55	326	123	0	88	266	41	1,677	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	1	1	0	1	3	4:00 PM	0	0	0	0	0	4:00 PM	0	0	1	1	2
4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	1	1	0	1	3	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	0	0	1	1	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	1	0	0	1	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	2	0	1	3	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	1	0	1	2	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	2	1	0	0	3	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	1	1	0	3	5	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	1	0	0	2	3	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	1	0	1	2	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	2	0	1	3	4:55 PM	1	0	0	0	1	4:55 PM	0	0	0	0	0
5:00 PM	1	1	1	2	5	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	1	1	2	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	1	1
5:10 PM	0	0	1	1	2	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	1	0	0	0	1	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	1	0	1	2	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	3	0	3	6	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	1	1	0	1	3	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	1	1
5:40 PM	0	1	1	2	4	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	5	1	0	6	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	2	0	2	4	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	9	25	5	25	64	Count Total	1	0	0	0	1	Count Total	0	0	1	3	4
Peak Hour	6	10	3	15	34	Peak Hour	1	0	0	0	1	Peak Hour	0	0	0	1	1

Appendix C – Safety

Crash History Data

Left-Turn Lane Warrant Analysis

Preliminary Signal Warrant Analysis



CITY OF WARRENTON, CLATSOP COUNTY

PACIFIC DR at LAKE DR, City of Warrenton, Clatsop County, 01/01/2017 to 12/31/2021

1 - 1 of 1 Crash records shown.

SER#	S	D	M	P	R	J	S	W	DATE	CLASS	CITY STREET	INT-TYPE	SPCL USE																				
INVEST	E	A	U	I	C	O	DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE																
RD DPT	E	L	G	N	H	R	TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED										
UNLOC?	D	C	S	V	L	K	LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE				
00034	N	N	N	N			01/31/2021	17	LAKE DR	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE	9	STRGHT														
CITY							SU	0	PACIFIC DR	S		STOP SIGN	N	WET	REAR	N/A	S	-N															
N							2P			06	0		N	DAY	PDO	PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00					
N							46 11 57.26	-123 57																									
								18.28																									
																02	NONE	9	STOP														
																N/A	S	-N															
																PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK		000	000	00					

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CITY OF WARRENTON, CLATSOP COUNTY

RIDGE RD at PETER IREDALE RD, City of Warrenton, Clatsop County, 01/01/2017 to 12/31/2021

1 - 2 of 4 Crash records shown.

SER#	P	R	J	S	W	DATE	CLASS	CITY STREET	INT-TYPE	SPCL USE	MOVE	A	S															
INVEST	E	A	U	I	C	O	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR	QTY	MOVE	PRTC	INJ	G	E	LICNS	PED	ERROR	ACT	EVENT	CAUSE	
RD DPT	E	L	G	N	H	R	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	TO	P#	TYPE	SVRTY	E	X	RES	LOC				
UNLOC?	D	C	S	V	L	K	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO											
00523	N	N	N	N	N	N	12/04/2020	17	PETER IREDALE RD	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE	0	TURN-L									
CITY						FR	0	RIDGE RD	CN		STOP SIGN	N	DRY	TURN		PRVTE	W -N								015	00		
N						4P			03	0		N	DUSK	INJ		PSNGR CAR			01	DRVR	INJB	50	F	OR-Y	028	000	02	
N						46 11 3.38	-123 57 23.78																					
																01	NONE	0	TURN-L									
																PRVTE	W -N									015	00	
																PSNGR CAR			02	PSNG	INJB	14	M		000	000	00	
																01	NONE	0	TURN-L									
																PRVTE	W -N									015	00	
																PSNGR CAR			03	PSNG	INJC	11	F		000	000	00	
																01	NONE	0	TURN-L									
																PRVTE	W -N									015	00	
																PSNGR CAR			04	PSNG	INJC	12	M		000	000	00	
																02	NONE	0	STRGHT									
																PRVTE	N -S									000	00	
																PSNGR CAR			01	DRVR	INJB	24	M	OR-Y OR<25	000	000	00	
00227	N	N	N	N	N	N	07/16/2020	17	PETER IREDALE RD	INTER	CROSS	N	N	CLD	ANGL-OTH	01	NONE	9	TURN-L									
CITY						TH	0	RIDGE RD	CN		STOP SIGN	N	DRY	TURN		N/A	W -N									000	00	
N						3P			03	0		N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	00	Unk UNK		000	000	00	
N						46 11 3.4	-123 57 23.8																					
																02	NONE	9	TURN-L									
																N/A	S -W									000	00	
																PSNGR CAR			01	DRVR	NONE	00	Unk UNK		000	000	00	
00342	N	N	N	N	N	N	07/10/2021	17	PETER IREDALE RD	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE	0	STRGHT								013,115	27,02
CITY						SA	0	RIDGE RD	CN		NONE	N	DRY	TURN		PRVTE	N -S									022	00	
N						1P			01	0		N	DAY	INJ		PSNGR CAR			01	DRVR	INJB	33	F	OR-Y	000	000	00	
N						46 11 3.39	-123 57 23.79																					
																01	NONE	0	STRGHT									
																PRVTE	N -S									022	00	
																PSNGR CAR			02	PSNG	INJB	31	M		000	000	00	
																02	NONE	0	TURN-L									
																PRVTE	S -W									022	00	
																PSNGR CAR			01	DRVR	INJC	22	F	OR-Y OR>25	016,004,028	038	27,02	
																02	NONE	0	TURN-L									
																PRVTE	S -W									022	00	
																PSNGR CAR			02	PSNG	INJB	09	M		000	000	00	

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CITY OF WARRENTON, CLATSOP COUNTY

RIDGE RD at SW 9TH ST, City of Warrenton, Clatsop County, 01/01/2017 to 12/31/2021

SER#	P	R	J	S	W	DATE	CLASS	CITY STREET	INT-TYPE	SPCL USE	MOVE	A	S	RD DPT	E	L	G	N	H	R	TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED	UNLOC?	D	C	S	V	L	K	LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE
------	---	---	---	---	---	------	-------	-------------	----------	----------	------	---	---	--------	---	---	---	---	---	---	------	------	---------------	--------	------	-------	-------	------	------	-------	------	------	-----	---	---	-------	-----	--------	---	---	---	---	---	---	-----	------	-----	-------	----------	-------	-------	-------	-------	----	------	----	----	------	-------	---	---	-----	-----	-------	-----	-------	-------

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

URBAN NON-SYSTEM CRASH LISTING

CITY OF WARRENTON, CLATSOP COUNTY

DELAURA BEACH LN and RIDGE RD, City of Warrenton, Clatsop County, 01/01/2017 to 12/31/2021

1 - 2 of 2 Crash records shown.

SER#	P	R	J	S	W	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	SPCL USE	MOVE	A	S	ACT	EVENT	CAUSE													
INVEST	E	A	U	I	C	O	DIST	FIRST STREET	DIRECT	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR	QTY	MOVE													
RD DPT	E	L	G	N	H	R	TIME	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED								
UNLOC?	D	C	S	V	L	K	LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE	
00179	N	N	N	N			04/15/2019	17	DELAURA BEACH LN	STRGHT	N	Y	UNK	FIX OBJ	01	NONE	9	STRGHT										079,035	10	
NO RPT							MO	1320	RIDGE RD	SE	(NONE)	UNKNOWN	N	WET	FIX	N/A		N -S									007	00		
Y							8P		Not at intersection	01		N	DARK	PDO	PSNGR CAR			01	DRVR	NONE	00	Unk	UNK		000	000	000	00		
N							46 8 56.31	-123 56 32.5			(02)																			
00730	N	N	N	N	N	N	12/20/2021	17	RIDGE RD	STRGHT	N	N	CLD	S-1STOP	01	NONE	0	STRGHT										124	07	
CITY							MO	50	DELAURA BEACH LN	S	(NONE)	STOP SIGN	N	WET	REAR	PRVTE		S -N									000	124	00	
N							1P			03		N	DAY	INJ	PSNGR CAR			01	DRVR	NONE	18	M	OR-Y		043	017	07			
N							46 9	-123 56 34.19			(02)																			
															02	NONE	0	STOP									011	00		
															PRVTE			S -N								000	000	00		
															PSNGR CAR			01	DRVR	INJB	57	F	OR-Y		000	000	00			

No crashes reported at 7. Delaura Beach Lane & 18th Street

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF WARRENTON, CLATSOP COUNTY

E HARBOR ST at N MAIN AVE, City of Warrenton, Clatsop County, 01/01/2017 to 12/31/2021

1 - 1 of 1 Crash records shown.

SER#	S	D	M	P	R	J	S	W	DATE	CLASS	CITY STREET	INT-TYPE	SPCL USE																
INVEST	E	A	U	I	C	O	DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE	A S											
RD DPT	E	L	G	N	H	R	TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED						
UNLOC?	D	C	S	V	L	K	LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE
00485	N	N	N	N	N	N	09/17/2021	17	E HARBOR ST	INTER	CROSS	N	N	CLR	PED													110	27
CITY							FR		N MAIN AVE	E		STOP SIGN	N	DRY	PED		-												
N							11A			06	0		N	DAY	INJ		STRGHT	01	CONV	INJC	34	M		I	XWK?	016	038	110	27
N							46 9 56.11	-123 55 26.46	010500100S00								NE	SW											
													01	NONE	0		STOP											011	00
																	PRVTE	E	-W								000	000	00
																	PSNGR	CAR	01	DRVR	NONE	33	M	OR-Y		000	000	00	00

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CITY OF WARRENTON, CLATSOP COUNTY

SW 9TH ST at CEDAR AVE, City of Warrenton, Clatsop County, 01/01/2017 to 12/31/2021

SER#	S	D	M	P	R	J	S	W	DATE	CLASS	CITY STREET	INT-TYPE	SPCL USE	INVEST	E	A	U	I	C	O	DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE	A	S	RD DPT	E	L	G	N	H	R	TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED	UNLOC?	D	C	S	V	L	K	LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE
------	---	---	---	---	---	---	---	---	------	-------	-------------	----------	----------	--------	---	---	---	---	---	---	-----	------	--------------	---------	----------	---------	-------	------	-------	----------	------	---	---	--------	---	---	---	---	---	---	------	------	---------------	--------	------	-------	-------	------	------	-------	------	------	-----	---	---	-------	-----	--------	---	---	---	---	---	---	-----	------	-----	-------	----------	-------	-------	-------	-------	----	------	----	----	------	-------	---	---	-----	-----	-------	-----	-------	-------

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URBAN NON-SYSTEM CRASH LISTING

SW 9TH ST at S MAIN AVE, City of Warrenton, Clatsop County, 01/01/2017 to 12/31/2021

1 - 5 of 6 Crash records shown.

SER#	S P R J S W DATE	CLASS	CITY STREET	INT-TYPE	SPCL USE	ACT	EVENT	CAUSE											
INVEST	E A U I C O DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN) INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE	A S								
RD DPT	E L G N H R TIME	FROM	SECOND STREET	DIRECT	LEGS TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G E LICNS	PED					
UNLOC?	D C S V L K LAT	LONG	LRS	LOCTN	(#LANES) CONTL	DRVWY	LIGHT	SVRTY	V# TYPE	TO	P# TYPE	SVRTY	E X RES	LOC	ERROR				
00760	N N N N N N 12/16/2017	17	S MAIN AVE	INTER	CROSS	N	N	CLD	O-1 L-TURN	01 NONE	0	TURN-L					02		
CITY		SA	SW 9TH ST	CN		STOP SIGN	N	DRY	TURN	PRVTE		S -W					000	00	
N		1P		01	0		N	DAY	INJ	PSNGR CAR		01 DRVR	INJC	18 F	OR-Y	028	000	02	
N		46 9 27.45	-123 55 41.53	010400100S00															
									02 NONE	0	STRGHT								
									PRVTE		N -S							000	00
									PSNGR CAR		01 DRVR	INJC	61 M	OR-Y	000	000		00	
00602	N N N N Y N 10/31/2018	17	S MAIN AVE	INTER	CROSS	N	N	RAIN	O-1 L-TURN	01 NONE		STRGHT					02,08		
CITY		WE	SW 9TH ST	CN		SCHL X-ING	N	WET	TURN	PRVTE		N -S					000	00	
N		3P		01	0		N	DAY	INJ	PSNGR CAR		01 DRVR	INJC	58 M	OR-Y	000	000	00	
N		46 9 27.47	-123 55 41.53	010400100S00															
									02 NONE		TURN-L								
									PRVTE		S -W							000	00
									PSNGR CAR		01 DRVR	NONE	16 M	OR-Y	004,028	000		02,08	
00388	N N N N N N 07/28/2018	17	S MAIN AVE	INTER	CROSS	N	N	CLR	O-1 L-TURN	01 NONE	9	TURN-L					02		
CITY		SA	SW 9TH ST	CN		NONE	N	DRY	TURN	N/A		S -W					000	00	
N		4P		01	0		N	DAY	PDO	PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000	00	
N		46 9 27.45	-123 55 41.53	010400100S00															
									02 NONE	9	STRGHT								
									N/A		N -S							000	00
									PSNGR CAR		01 DRVR	NONE	00 Unk	UNK	000	000		00	
00336	N N N N N 07/10/2019	17	S MAIN AVE	INTER	CROSS	N	N	RAIN	ANGL-OTH	01 NONE	0	STRGHT					03,02		
CITY		WE	SW 9TH ST	CN		STOP SIGN	N	WET	TURN	PRVTE		N -S					000	00	
N		3P		03	0		N	DAY	INJ	PSNGR CAR		01 DRVR	NONE	45 M	SUSP	000	000	00	
N		46 9 27.45	-123 55 41.53	010400100S00															
									02 NONE	1	TURN-L								
									PRVTE		W -N							000	00
									PSNGR CAR		01 DRVR	INJC	65 F	OR-Y	021,028	000		03,02	
00307	Y N N N N N 06/25/2021	17	S MAIN AVE	INTER	CROSS	N	N	CLR	ANGL-OTH	01 NONE	0	STRGHT					121	03,30	
CITY		FR	SW 9TH ST	CN		STOP SIGN	N	DRY	ANGL	PRVTE		S -N					000	121	00
N		12P		04	0		N	DAY	INJ	PSNGR CAR		01 DRVR	INJB	86 M	OR-Y	000	000	00	
N		46 9 27.45	-123 55 41.53	010400100S00															
									02 NONE	0	STRGHT								
									PRVTE		W -E							000	00
									PSNGR CAR		01 DRVR	NONE	32 F	OR-Y	021,050	000		03,30	

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URBAN NON-SYSTEM CRASH LISTING
SW 9TH ST at S MAIN AVE, City of Warrenton, Clatsop County, 01/01/2017 to 12/31/2021
6 - 6 of 6 Crash records shown.

SER#	S	D	M	P	R	J	S	W	DATE	CLASS	CITY STREET	INT-TYPE	SPCL USE					A	S																							
INVEST	E	A	U	I	C	O	DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE																									
RD DPT	E	L	G	N	H	R	TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED																			
UNLOC?	D	C	S	V	L	K	LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE													
00571	N	N	N	N	N	N	10/20/2021	17	S MAIN AVE	INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE	0	TURN-L																						02	
CITY							WE		SW 9TH ST	CN		STOP SIGN	N	WET	TURN		PRVTE	W	-N									015											00			
N							6P			02	0		N	DLIT	INJ		PSNGR CAR			01	DRVR	NONE	19	M	OR-Y		028		000										02			
N							46 9 27.45	-123 55	010400100S00																																	
							41.53																																			

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CONTINUOUS SYSTEM CRASH LISTING

009: OREGON COAST

Highway 009 ALL ROAD TYPES, MP 6.47 to 6.67 01/01/2017 to 12/31/2021, Both Add and Non-Add mileage

Rear-End Collisions within 500 feet
of signal - Not duplicates

20 - 24 of 39 Crash records shown.

SER#	P	R	J	S	W	DATE	COUNTY	RD#	FC	CONN#	RD CHAR	INT-TYPE	SPCL USE	A	S																
INVEST	E	A	U	I	C	O	CITY	COMPNT	FIRST STREET	DIRECT	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR	QTY	MOVE													
RD DPT	E	L	G	N	H	R	URBAN AREA	MLG TYP	SECOND STREET	LOCTN	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED								
UNLOC?	D	C	S	V	L	K	LONG	MILEPNT	LRS	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE			
00370	N	N	N	N	N	07/08/2017	CLATSOP	1	14		INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE	9	TURN-L								04			
CITY						SA	WARRENTON	MN	0	E HARBOR ST ALT	CN			TRF SIGNAL	N	DRY	TURN	N/A	NW-NE								000	00			
N						9A	ASTORIA UA	6.57		OREGON COAST HY	04	0	N	DAY	PDO	PSNGR CAR			01	DRVR	NONE	00	Unk	UNK		000	000	00			
N						46 9 45.28	-123 53 47.24			000900100S00																			UNK		
																02	NONE	9	STRGHT												
																N/A				SW-NE									000	00	
																PSNGR CAR				01	DRVR	NONE	00	Unk	UNK		000	000	00		
																														UNK	
00668	N	N	N	N	N	11/03/2017	CLATSOP	1	14		STRGHT	N	N	RAIN	S-1STOP	01	NONE	9	STRGHT								124	27			
CITY						FR	WARRENTON	MN	0	OREGON COAST HY	SW	(NONE)	NONE	N	WET	REAR	N/A		NE-SW								000	00			
N						1P	ASTORIA UA	6.58		E HARBOR ST ALT	03		N	DAY	PDO	PSNGR CAR			01	DRVR	NONE	00	Unk	UNK		000	000	00			
N						46 9 44.92	-123 53 47.85			000900100S00																				UNK	
																02	NONE	9	STOP												
																N/A				NE-SW										011	00
																PSNGR CAR				01	DRVR	NONE	00	Unk	UNK		000	000	00		
																														UNK	
00274	N	N	N	N	N	08/06/2020	CLATSOP	1	14		STRGHT	N	N	CLR	S-1STOP	01	NONE	9	STRGHT								013	22,27			
CITY						TH	WARRENTON	MN	0	OREGON COAST HY	SW	(NONE)	NONE	N	DRY	REAR	N/A		SW-NE								022	00			
N						12P	ASTORIA UA	6.58		E HARBOR ST ALT	06		N	DAY	PDO	PSNGR CAR			01	DRVR	NONE	00	Unk	UNK		000	000	00			
N						46 9 44.91	-123 53 47.86			000900100S00																					UNK
																02	NONE	9	STOP												
																N/A				SW-NE										022	00
																PSNGR CAR				01	DRVR	NONE	00	Unk	UNK		000	000	00		
																															UNK
00154	N	N	N	N	N	04/09/2018	CLATSOP	1	14		STRGHT	Y	N	CLR	S-1STOP	01	NONE	9	STRGHT									07			
STATE						MO	WARRENTON	MN	0	E HARBOR ST ALT	SW	(NONE)	NONE	N	DRY	REAR	N/A		SW-NE								000	00			
N						5P	ASTORIA UA	6.59		OREGON COAST HY	03		N	DAY	PDO	PSNGR CAR			01	DRVR	NONE	00	Unk	UNK		000	000	00			
N						46 9 44.57	-123 53 48.46			000900100S00																					UNK
																02	NONE	9	STOP												
																N/A				SW-NE										011	00
																PSNGR CAR				01	DRVR	NONE	00	Unk	UNK		000	000	00		
																															UNK
00705	Y	N	N	N	N	11/15/2017	CLATSOP	1	14		STRGHT	N	N	RAIN	S-STRGHT	01	NONE	9	STRGHT									07,01			
CITY						WE	WARRENTON	MN	0	OREGON COAST HY	SW	(NONE)	NONE	N	WET	REAR	N/A		SW-NE								000	00			
N						6P	ASTORIA UA	6.59		E HARBOR ST ALT	04		N	DLIT	PDO	PSNGR CAR			01	DRVR	NONE	00	Unk	UNK		000	000	00			
N						46 9 44.57	-123 53 48.47			000900100S00																					UNK
																02	NONE	9	STRGHT												
																N/A				SW-NE										000	00
																PSNGR CAR				01	DRVR	NONE	00	Unk	UNK		000	000	00		
																															UNK

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009: OREGON COAST

Highway 009 ALL ROAD TYPES, MP 6.47 to 6.67 01/01/2017 to 12/31/2021, Both Add and Non-Add mileage

25 - 28 of 39 Crash records shown.

Rear-End Collisions within 500 feet of signal - Not duplicates

SER#	P	R	J	S	W	DATE	COUNTY	RD#	FC	CONN#	RD CHAR	INT-TYPE	SPCL USE	MOVE	A	S	LOC	ERROR	ACT	EVENT	CAUSE											
INVEST	E	A	U	I	C	O	CITY	COMPNT	FIRST STREET	DIRECT	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TLRQ	QTY	FROM	TO	P#	TYPE	SVRTY	INJ	G	E	LICNS	PED					
RD DPT	E	L	G	N	H	R	URBAN AREA	MLG	TYP	SECOND STREET	LOCTN	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	TO	P#	TYPE	SVRTY	INJ	G	E	LICNS	PED					
UNLOC?	D	C	S	V	L	K	LONG	MILEPNT	LR			(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	INJ	G	E	LICNS	PED					
00232	N	N	N	N	N	N	07/19/2020	CLATSOP	1	14		STRGHT																				
CITY	SU						WARRENTON	MN	0	OREGON COAST HY	SW	(NONE)	NONE	N	DRY	REAR	PRVTE	SW-NE										07,27				
N							ASTORIA UA	6.59	E	HARBOR ST ALT	04			N	DAY	INJ	PSNGR CAR			01	DRVR	INJB	35	M	OR-Y			043,016	038	07,27		
N						46 9 44.53	-123 53 48.49			000900100S00		(02)																OR>25				
													02	NONE			STOP	SW-NE										022	00			
													02	PRVTE			STOP	SW-NE										022	00			
													02	PSNGR CAR			STOP	SW-NE			01	DRVR	NONE	46	M	OTH-Y		000	000	00		
													03	NONE			STOP	SW-NE										011	00			
													03	RENTL			STOP	SW-NE			01	DRVR	NONE	29	F	OTH-Y		000	000	00		
													03	PSNGR CAR			STOP	SW-NE										011	00			
00563	N	N	N	N	N	10/15/2021	CLATSOP	1	14		STRGHT																					
CITY	FR						WARRENTON	MN	0	OREGON COAST HY	SW	(NONE)	UNKNOWN	N	DRY	REAR	N/A	SW-NE											07			
N							ASTORIA UA	6.59	E	HARBOR ST ALT	04			N	DAY	PDO	PSNGR CAR			01	DRVR	NONE	00	Unk	UNK		000	000	00	00		
N						46 9 44.55	-123 53 48.52			000900100S00		(02)																		UNK		
													02	NONE			STOP	SW-NE											011	00		
													02	N/A			STOP	SW-NE			01	DRVR	NONE	00	Unk	UNK		000	000	00	00	
													02	PSNGR CAR			STOP	SW-NE										000	000	00	00	
00032	N	N	N	N	N	01/21/2019	CLATSOP	1	14		STRGHT																					
NONE	MO						WARRENTON	MN	0	OREGON COAST HY	SW	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE	SW-NE											003	27		
N							ASTORIA UA	6.60	E	HARBOR ST ALT	04			N	DAY	INJ	PSNGR CAR			01	DRVR	NONE	40	F	OR-Y		016	038	003	27		
N						46 9 44.18	-123 53 49.08			000900100S00		(02)																			OR<25	
													02	NONE			STOP	SW-NE											011	00		
													02	PRVTE			STOP	SW-NE			01	DRVR	INJC	48	F	OR-Y		000	000	00	00	
													02	PSNGR CAR			STOP	SW-NE											000	000	00	00
													02	PSNGR CAR			STOP	SW-NE											011	00		
00645	Y	N	N	N	N	11/22/2018	CLATSOP	1	14		STRGHT																					
CITY	TH						WARRENTON	MN	0	OREGON COAST HY	SW	(NONE)	NONE	N	SNO	SS-O	PRVTE	SW-NE											000	33,13,06	00	
N							ASTORIA UA	6.61	E	HARBOR ST ALT	03			N	DAY	INJ	PSNGR CAR			01	DRVR	NONE	23	M	OR-Y		073,031,051	017		33,30,06		
N						46 9 43.88	-123 53 49.7			000900100S00		(02)																			OR<25	
													02	NONE			STRGHT	SW-NE											000	00		
													02	PRVTE			STRGHT	SW-NE			01	DRVR	NONE	59	M	OTH-Y		045	000	13		
													02	PSNGR CAR			STRGHT	SW-NE											000	00		
													02	PSNGR CAR			STRGHT	SW-NE			02	PSNG	INJC	57	F			000	000	00	00	

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TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CONTINUOUS SYSTEM CRASH LISTING

009: OREGON COAST

Highway 009 ALL ROAD TYPES, MP 6.47 to 6.67 01/01/2017 to 12/31/2021, Both Add and Non-Add mileage

29 - 32 of 39 Crash records shown.

Rear-End Collisions within 500 feet
of signal - Not duplicates

SER#	P	R	J	S	W	DATE	COUNTY	RD#	FC	CONN#	RD CHAR	INT-TYPE	SPCL USE	A	S	INJ	RES	LOC	ERROR	ACT	EVENT	CAUSE								
INVEST	E	A	U	I	C	O	CITY	COMPNT	FIRST	STREET	DIRECT	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR	QTY	MOVE											
RD DPT	E	L	G	N	H	R	URBAN AREA	MLG	TYP	SECOND	STREET	LOCTN	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED					
UNLOC?	D	C	S	V	L	K	LONG	MILEPNT	LRS			(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE
00150	N	N	N	N	N	N	CLATSOP	1	14		STRGHT	N	NONE	9	STRGHT											035	07,27			
CITY							WARRENTON	MN	0	OREGON COAST HY	SW	(NONE)	NONE	N	DRY	REAR	N/A		NE-SW							000	00			
N						5P	ASTORIA UA	6.61		E HARBOR ST ALT	03			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000	00		
N						46 9 43.85	-123 53 49.72			000900100S00		(02)																		
														02	NONE	9	STOP		NE-SW								011	00		
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000	00		
00085	N	N	N	N	N	N	CLATSOP	1	14		STRGHT	N	NONE	9	STRGHT											013	22			
CITY							WARRENTON	MN	0	OREGON COAST HY	SW	(NONE)	NONE	N	WET	REAR	N/A		NE-SW							022	00			
N						1P	ASTORIA UA	6.61		E HARBOR ST ALT	03			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000	00		
N						46 9 43.28	-123 53 50.68			000900100S00		(02)																		
														02	NONE	9	STOP		NE-SW								022	00		
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000	00		
00054	N	N	N	N	N	N	CLATSOP	1	14		STRGHT	Y	NONE	9	STRGHT												07,27			
CITY							WARRENTON	MN	0	OREGON COAST HY	SW	(NONE)	UNKNOWN	N	WET	REAR	N/A		SW-NE							000	00			
N						1P	ASTORIA UA	6.61		E HARBOR ST ALT	04			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000	00		
N						46 9 43.87	-123 53 49.69			000900100S00		(02)																		
														02	NONE	9	STOP		SW-NE								011	00		
																		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK	000	000	00		
00480	Y	N	N	N	N	N	CLATSOP	1	14		STRGHT	Y	NONE	9	STRGHT												01,07			
CITY							WARRENTON	MN	0	OREGON COAST HY	SW	(NONE)	TRF SIGNAL	N	WET	REAR	PRVTE		SW-NE							000	00			
N						1P	ASTORIA UA	6.61		E HARBOR ST ALT	04			N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	44	M	OTH-Y	026	000	01,07		
N						46 9 43.89	-123 53 49.7			000900100S00		(02)																		
														02	NONE		STOP		SW-NE								012	00		
																		PRVTE		01	DRVR	NONE	60	M	NONE	000	000	00		
																		PSNGR CAR												
00280	Y	N	N	N		06/15/2019	CLATSOP	1	14		STRGHT	Y	NONE	0	STRGHT												013	01		
NO RPT							WARRENTON	MN	0	OREGON COAST HY	SW	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE		SW-NE							022	00			
N						6P	ASTORIA UA	6.61		E HARBOR ST ALT	06			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	64	M	OR-Y	047,026	000	01		
N						46 9 43.83	-123 53 49.72			000900100S00		(02)																		
														02	NONE	0	STOP		SW-NE								022	013	00	
																		PRVTE		01	DRVR	NONE	74	M	OTH-Y	000	000	00		
																		PSNGR CAR												

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009: OREGON COAST

Highway 009 ALL ROAD TYPES, MP 6.47 to 6.67 01/01/2017 to 12/31/2021, Both Add and Non-Add mileage

33 - 36 of 39 Crash records shown.

Rear-End Collisions within 500 feet of signal - Not duplicates

SER#	P	R	J	S	W	DATE	COUNTY	RD#	FC	CONN#	RD CHAR	INT-TYPE	SPCL USE	MOVE	A	S	INJ	G	E	LICNS	PED	ERROR	ACT	EVENT	CAUSE													
INVEST	E	A	U	I	C	DAY	CITY	COMPNT	FIRST STREET	DIRECT	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR	QTY	OWNER	FROM	PRTC	INJ	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE									
RD DPT	E	L	G	N	H	R	TIME	URBAN AREA	MLG	TYP	SECOND STREET	LOCTN	LEGS	TRAF-	RNDBT	SURF	COLL	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE							
UNLOC?	D	C	S	V	L	K	LAT	LONG	MILEPNT	LRS	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY																							
00096	N	N	N	N	N	03/09/2018	CLATSOP	1	14		STRGHT	N																										
CITY						FR	WARRENTON	MN	0	OREGON COAST HY	UN	(NONE)	TRF SIGNAL	N	DRY	REAR	N/A																					
N						2P	ASTORIA UA	6.63		E HARBOR ST ALT	04			N	DAY	PDO	PSNGR CAR																					
N						46 9 43.14	-123 53 50.96			000900100S00		(02)																										
00343	N	N	N	N	N	07/10/2021	CLATSOP	1	14		STRGHT	Y																										
NONE						SA	WARRENTON	MN	0	OREGON COAST HY	SW	(NONE)	UNKNOWN	N	DRY	REAR	N/A																					
N						4P	ASTORIA UA	6.63		E HARBOR ST ALT	03			N	DAY	PDO	PSNGR CAR																					
N						46 9 43.17	-123 53 50.93			000900100S00		(02)																										
00681	N	N	N	N	N	11/07/2017	CLATSOP	1	14		STRGHT	N																										
CITY						TU	WARRENTON	MN	0	OREGON COAST HY	SW	(NONE)	UNKNOWN	N	DRY	REAR	PRVTE																					
N						5P	ASTORIA UA	6.63		E HARBOR ST ALT	04			N	DARK	INJ	PSNGR CAR																					
N						46 9 43.15	-123 53 50.94			000900100S00		(02)																										
00144	N	N	N	N	N	03/21/2017	CLATSOP	1	14		STRGHT	N																										
CITY						TU	WARRENTON	MN	0	OREGON COAST HY	SW	(NONE)	NONE	N	DRY	REAR	N/A																					
N						1P	ASTORIA UA	6.63		E HARBOR ST ALT	04			N	DAY	PDO	PSNGR CAR																					
N						46 9 43.15	-123 53 50.94			000900100S00		(02)																										

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009: OREGON COAST

Highway 009 ALL ROAD TYPES, MP 6.47 to 6.67 01/01/2017 to 12/31/2021, Both Add and Non-Add mileage

Rear-End Collisions within 500 feet of signal - Not duplicates

37 - 39 of 39 Crash records shown.

SER#	P	R	J	S	W	DATE	COUNTY	RD#	FC	CONN#	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	TRLR	QTY	MOVE	A	S	G	E	LICNS	PED	ERROR	ACT	EVENT	CAUSE			
INVEST	E	A	U	I	C	O	CITY	COMPNT	FIRST	STREET	DIRECT	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	OWNER	FROM	TO	PRTC	INJ	G	E	LICNS	PED	ERROR	ACT	EVENT	CAUSE				
RD DPT	E	L	G	N	H	R	URBAN AREA	MLG	TYP	SECOND	STREET	LOCTN	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED	ERROR	ACT	EVENT	CAUSE				
UNLOC?	D	C	S	V	L	K	LONG	MILEPNT	LRS			(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE			
																	02	NONE	9	STRGHT													
																	N/A		SW-NE												006	00	
																	PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK		000	000	000	000	00		
00730	Y	N	N	N	N	N	12/29/2018	CLATSOP	1	14		STRGHT	Y	N	RAIN	S-1STOP	01	NONE	9	STRGHT											01		
CITY						SA	WARRENTON	MN	0	OREGON COAST HY	SW	(NONE)	UNKNOWN	N	WET	REAR	N/A		SW-NE											001	00		
N						4P	ASTORIA UA	6.67		E HARBOR ST ALT	03			N	DUSK	PDO		PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK		000	000	000	00		
N						46 9 41.74	-123 53 53.4					(02)																					
																	02	NONE	9	STOP													
																	N/A		SW-NE												011	00	
																	PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK		000	000	000	000	00	00	
00409	N	N	N	N	N	N	07/25/2017	CLATSOP	1	14		STRGHT	Y	N	CLR	S-1STOP	01	NONE	9	STRGHT												07	
CITY						TU	WARRENTON	MN	0	OREGON COAST HY	SW	(NONE)	NONE	N	DRY	REAR	N/A		SW-NE												000	00	
N						4P	ASTORIA UA	6.67		E HARBOR ST ALT	04			N	DAY	PDO		PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK		000	000	000	00		
N						46 9 41.74	-123 53 53.4					(02)																					
																	02	NONE	9	STOP													
																	N/A		SW-NE												011	00	
																	PSNGR	CAR		01	DRVR	NONE	00	Unk	UNK		000	000	000	000	00	00	

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CITY OF WARRENTON, CLATSOP COUNTY

ENSIGN AVE at FT STEVENS HY SPUR, City of Warrenton, Clatsop County, 01/01/2017 to 12/31/2021

SER#	S	D	M	P	R	J	S	W	DATE	CLASS	CITY STREET	INT-TYPE	SPCL USE	INVEST	E	A	U	I	C	O	DAY	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE	A	S	RD DPT	E	L	G	N	H	R	TIME	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED	UNLOC?	D	C	S	V	L	K	LAT	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE
------	---	---	---	---	---	---	---	---	------	-------	-------------	----------	----------	--------	---	---	---	---	---	---	-----	------	--------------	---------	----------	---------	-------	------	-------	----------	------	---	---	--------	---	---	---	---	---	---	------	------	---------------	--------	------	-------	-------	------	------	-------	------	------	-----	---	---	-------	-----	--------	---	---	---	---	---	---	-----	------	-----	-------	----------	-------	-------	-------	-------	----	------	----	----	------	-------	---	---	-----	-----	-------	-----	-------	-------

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

OREGON.. DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF WARRENTON, CLATSOP COUNTY

ENSIGN AVE at OREGON COAST HY, City of Warrenton, Clatsop County, 01/01/2017 to 12/31/2021

1 - 3 of 31 Crash records shown.

SER#	P	R	J	S	W	DATE	CLASS	CITY STREET	INT-TYPE	SPCL USE																			
INVEST	E	A	U	I	C	O	DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE													
RD DPT	E	L	G	N	H	R	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED							
UNLOC?	D	C	S	V	L	K	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE	
00608	N	N	N	N	N	N	10/10/2017	14	ENSIGN AVE	INTER	CROSS	N	N	CLR	BIKE														02
STATE						TU		OREGON COAST HY	NE		R-GRN-SIG	N	WET	TURN		-													
N						12P			05	0		N	DAY	INJ		STRGHT	01	BIKE	INJB	57	M			I	XWLK 028	035		02	
N						46 8 49.8	-123 55 3.36	000900100S00								SE	NW												
															01	NONE	1	TURN-R											
															PRVTE	SE-NE											000	00	
															PSNGR	CAR		01	DRVR	NONE	41	M	OTH-Y		000		000	00	
00192	Y	N	N	N	N	N	04/28/2018	14	ENSIGN AVE	INTER	CROSS	N	N	CLD	S-1STOP	01	NONE	0	STRGHT									07,01	
CITY						SA		OREGON COAST HY	NE		TRF SIGNAL	N	DRY	REAR		PRVTE											000	00	
N						2P			06	0		N	DAY	INJ		PSNGR	CAR		01	DRVR	NONE	42	M	OR-Y		043,047	000		07,01
N						46 8 49.82	-123 55 3.36	000900100S00																					
															02	NONE	0	STOP											
															PRVTE	NE-SW											011	00	
															PSNGR	CAR		01	DRVR	INJC	19	F	OR-Y		000		000	00	
															02	NONE	0	STOP											
															PRVTE	NE-SW											011	00	
															PSNGR	CAR		02	PSNG	NONE	01	M			000		000	00	
00421	N	N	N	N	N	N	08/13/2018	14	ENSIGN AVE	INTER	CROSS	N	N	CLD	S-1STOP	01	NONE	0	STRGHT									11	
CITY						MO		OREGON COAST HY	NE		TRF SIGNAL	N	DRY	REAR		RENTL											000	11	
N						10A			06	0		N	DAY	INJ		PSNGR	CAR		01	DRVR	NONE	56	F	OTH-Y		017	088	00	
N						46 8 49.8	-123 55 3.36	000900100S00																					
															02	NONE	0	STOP											
															RENTL	NE-SW											011	00	
															PSNGR	CAR		01	DRVR	INJC	62	M	OTH-Y		000		000	00	
															02	NONE	0	STOP											
															RENTL	NE-SW											011	00	
															PSNGR	CAR		02	PSNG	INJC	27	F			000		000	00	
															02	NONE	0	STOP											
															RENTL	NE-SW											011	00	
															PSNGR	CAR		03	PSNG	INJC	58	F			000		000	00	
															02	NONE	0	STOP											
															RENTL	NE-SW											011	00	
															PSNGR	CAR		04	PSNG	INJC	64	F			000		000	00	

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CITY OF WARRENTON, CLATSOP COUNTY

ENSIGN AVE at OREGON COAST HY, City of Warrenton, Clatsop County, 01/01/2017 to 12/31/2021

9 - 13 of 31 Crash records shown.

SER#	S	D	M	P	R	J	S	W	DATE	CLASS	CITY	STREET	INT-TYPE	SPCL USE	ACT	EVENT	CAUSE																			
INVEST	E	A	U	I	C	O	D	A		DIST	FIRST STREET	RD CHAR	(MEDIAN)	INT-REL	OFFRD	WTHR	CRASH	TRLR QTY	MOVE	A	S															
RD DPT	E	L	G	N	H	R	T	I	M	FROM	SECOND STREET	DIRECT	LEGS	TRAF-	RNDBT	SURF	COLL	OWNER	FROM	PRTC	INJ	G	E	LICNS	PED											
UNLOC?	D	C	S	V	L	K	L	A	T	LONG	LRS	LOCTN	(#LANES)	CONTL	DRVWY	LIGHT	SVRTY	V#	TYPE	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE					
00416	N	N	N	N	N	N	N	N	07/28/2017	17	ENSIGN AVE	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE	1	STRGHT												27			
CITY								FR		0	OREGON COAST HY	SE		TRF SIGNAL	N	DRY	REAR		PRVTE		SE-NW									000	00					
N								12P				06	0		N	DAY	INJ		SEMI TOW			01	DRVR	NONE	53	M	OR-Y		016	000		27				
N								46 8 50.14		-123 55 3.08																OR<25										
																			02	NONE	0	STOP														
																			PRVTE			SE-NW										011	00			
																			PSNGR CAR				01	DRVR	INJC	65	F	OR-Y		000	000		00			
																										OR<25										
00236	N	N	N	N	N	N	N	Y	04/30/2017	17	ENSIGN AVE	INTER	CROSS	N	N	CLD	S-1STOP	01	NONE	9	STRGHT												07			
CITY								SU		0	OREGON COAST HY	SE		TRF SIGNAL	N	DRY	REAR		N/A		SE-NW										000	00				
N								2P				06	0		N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	00	Unk	UNK		000	000		00				
N								46 8 50.14		-123 55 3.08																UNK										
																			02	NONE	9	STOP														
																			N/A			SE-NW											013	00		
																			PSNGR CAR				01	DRVR	NONE	00	Unk	UNK		000	000		00			
																										UNK										
00456	N	N	N	N	N	N	N	N	08/25/2018	17	ENSIGN AVE	INTER	CROSS	N	N	CLD	S-1STOP	01	NONE	9	STRGHT													29		
CITY								SA		0	OREGON COAST HY	SE		TRF SIGNAL	N	DRY	REAR		N/A		SE-NW											000	00			
N								1P				06	0		N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	00	Unk	UNK		000	000		00				
N								46 8 49.96		-123 55 2.49																UNK										
																			02	NONE	9	STOP														
																			N/A			SE-NW												011	00	
																			PSNGR CAR				01	DRVR	NONE	00	Unk	UNK		000	000		00			
																										UNK										
00056	N	N	N	N	N	N	N	N	02/08/2020	17	ENSIGN AVE	INTER	CROSS	N	N	UNK	S-1STOP	01	NONE	9	STRGHT														13,02	
NO RPT								SA		0	OREGON COAST HY	SE		TRF SIGNAL	N	UNK	SS-O		N/A		SE-NW											000	00			
N								7P				06	0		N	DLIT	PDO		PSNGR CAR			01	DRVR	NONE	00	Unk	UNK		000	000		00				
N								46 8 49.99		-123 55 2.54																UNK										
																			02	NONE	9	STOP														
																			N/A			SE-NW												011	00	
																			PSNGR CAR				01	DRVR	NONE	00	Unk	UNK		000	000		00			
																										UNK										
00021	Y	N	N	N	N	N	N	N	01/20/2021	17	ENSIGN AVE	INTER	CROSS	N	Y	CLD	FIX OBJ	01	NONE	0	STRGHT													124,040,010	01	
CITY								WE		0	OREGON COAST HY	SE		TRF SIGNAL	N	WET	FIX		PRVTE		NW-SE											000	040,079,010	00		
N								1A				05	0		N	DLIT	INJ		PSNGR CAR			01	DRVR	INJC	30	F	OR-Y		047,081	017			01			
N								46 8 49.69		-123 55 1.54																	OR<25									

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Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 2 Peter Iredale Road & NW Ridge Road
 Date: 8/16/2023
 Scenario: 2025 Buildout Conditions - AM Peak Hour (SB)

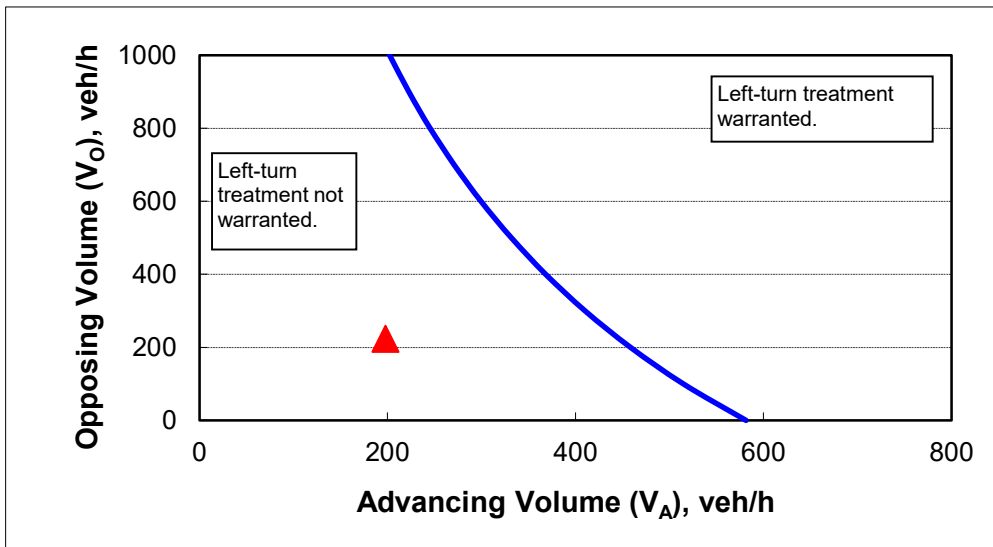
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	9%
Advancing volume (V_A), veh/h:	198
Opposing volume (V_O), veh/h:	223

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	447
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 2 Peter Iredale Road & NW Ridge Road
 Date: 8/16/2023
 Scenario: 2025 Buildout Conditions - PM Peak Hour (SB)

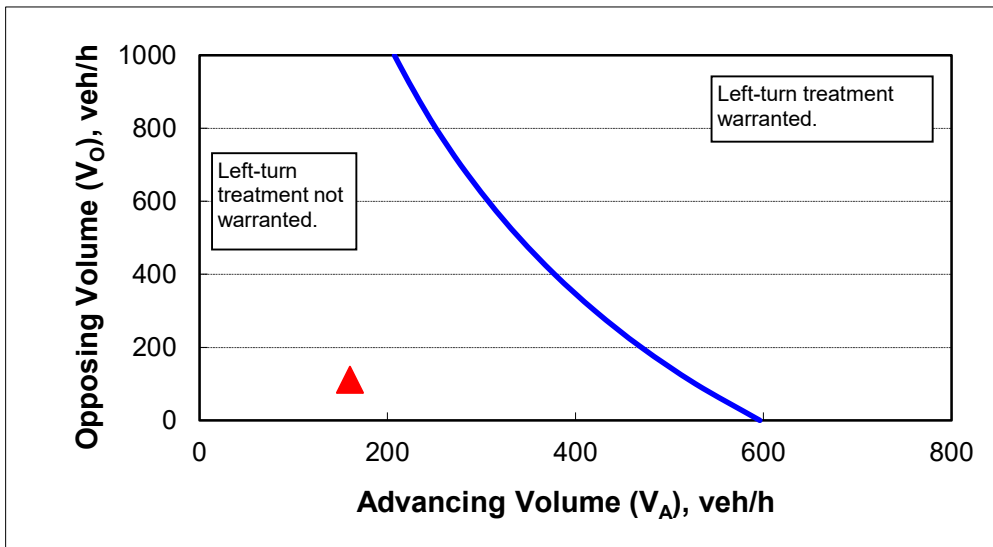
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	8%
Advancing volume (V_A), veh/h:	160
Opposing volume (V_O), veh/h:	111

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	521
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 2 Peter Iredale Road & NW Ridge Road
 Date: 8/16/2023
 Scenario: 2025 Buildout Conditions - AM Peak Hour (NB)

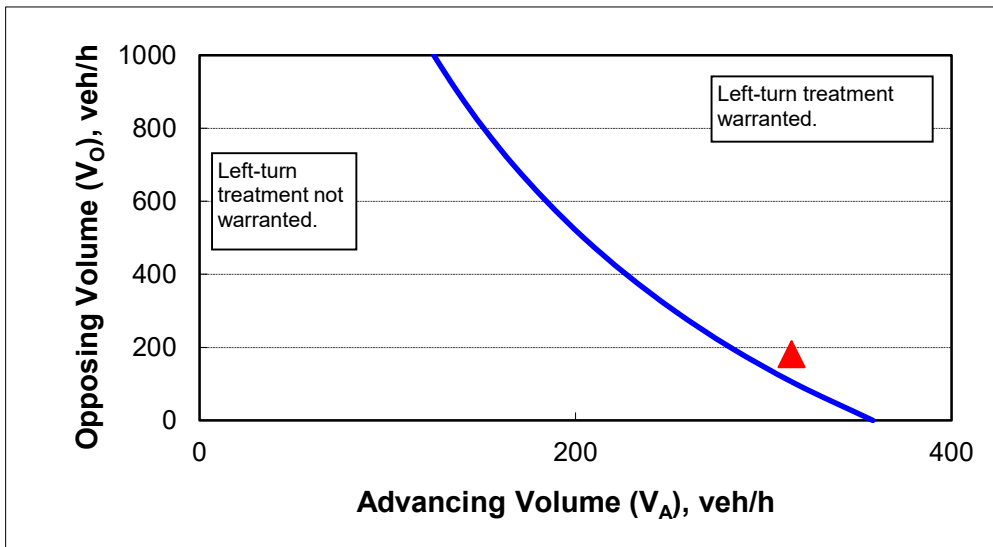
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	29%
Advancing volume (V_A), veh/h:	315
Opposing volume (V_O), veh/h:	181

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	289
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 2 Peter Iredale Road & NW Ridge Road
 Date: 8/16/2023
 Scenario: 2025 Background Conditions - AM Peak Hour (NB)

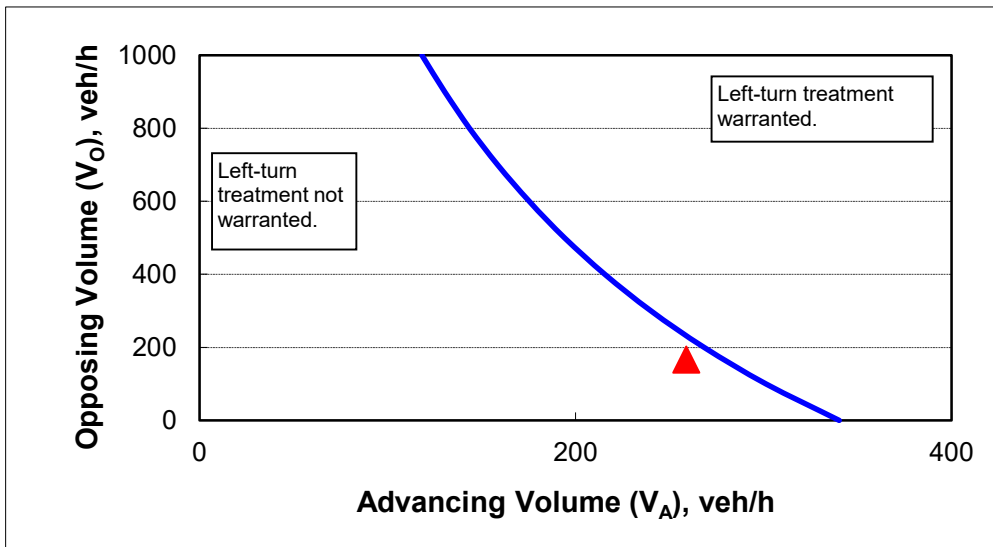
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	36%
Advancing volume (V_A), veh/h:	259
Opposing volume (V_O), veh/h:	166

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	279
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 2 Peter Iredale Road & NW Ridge Road
 Date: 8/16/2023
 Scenario: 2023 Existing Conditions - AM Peak Hour (NB)

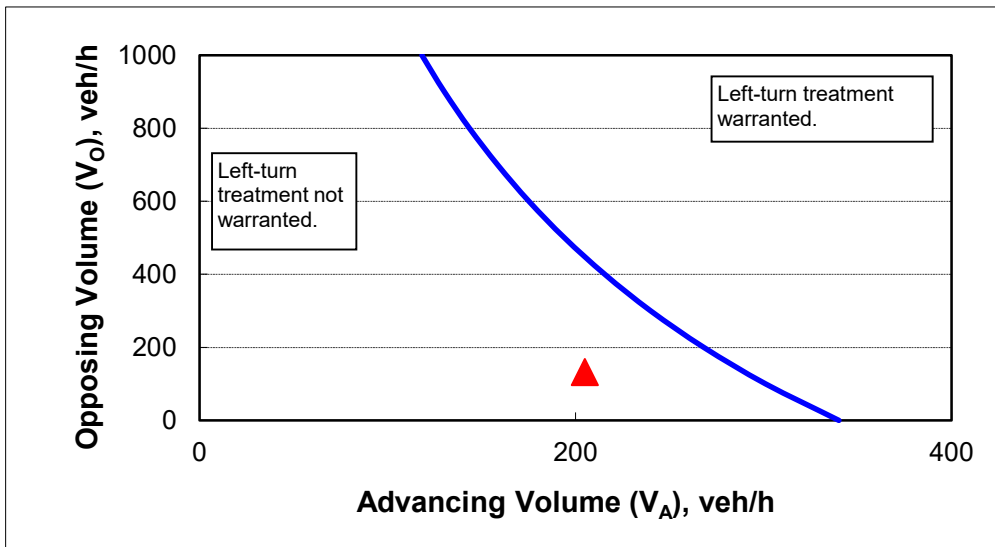
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	36%
Advancing volume (V_A), veh/h:	205
Opposing volume (V_O), veh/h:	132

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	290
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 2 Peter Iredale Road & NW Ridge Road
 Date: 8/16/2023
 Scenario: 2025 Buildout Conditions - PM Peak Hour (NB)

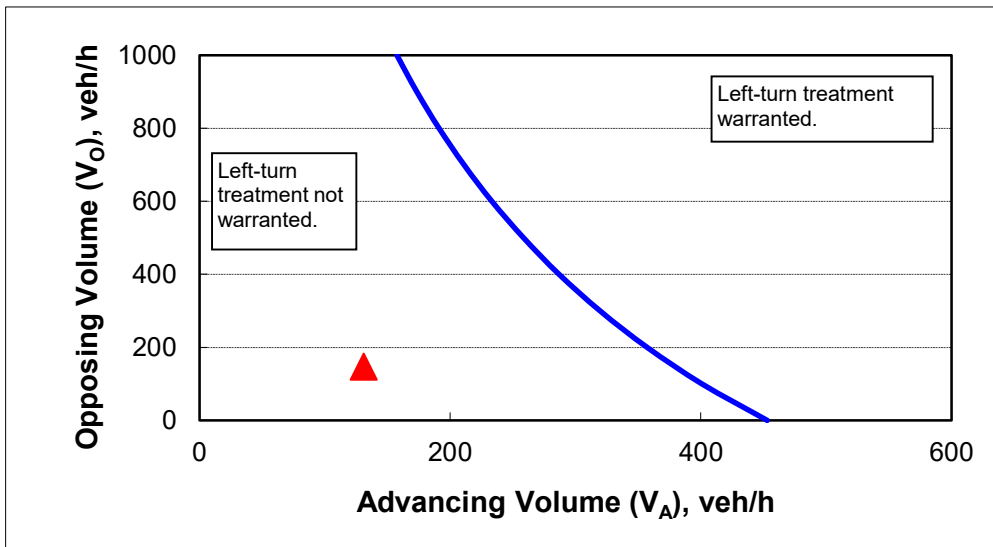
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	15%
Advancing volume (V_A), veh/h:	131
Opposing volume (V_O), veh/h:	147

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	379
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 3 North Site Access & NW Ridge Road
 Date: 8/16/2023
 Scenario: 2025 Buildout Conditions - AM Peak Hour (SB)

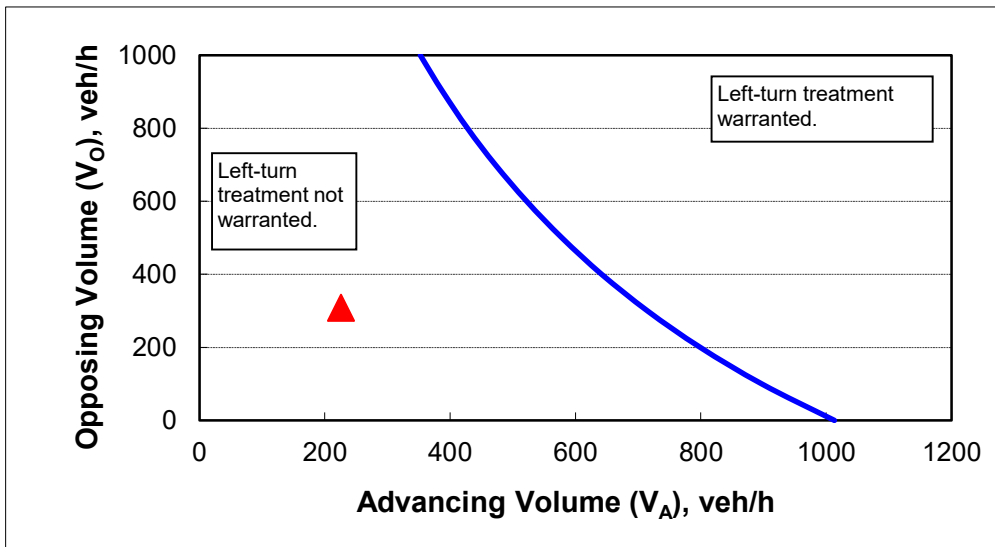
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	3%
Advancing volume (V_A), veh/h:	226
Opposing volume (V_O), veh/h:	308

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	709
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 3 North Site Access & NW Ridge Road
 Date: 8/16/2023
 Scenario: 2025 Buildout Conditions - PM Peak Hour (SB)

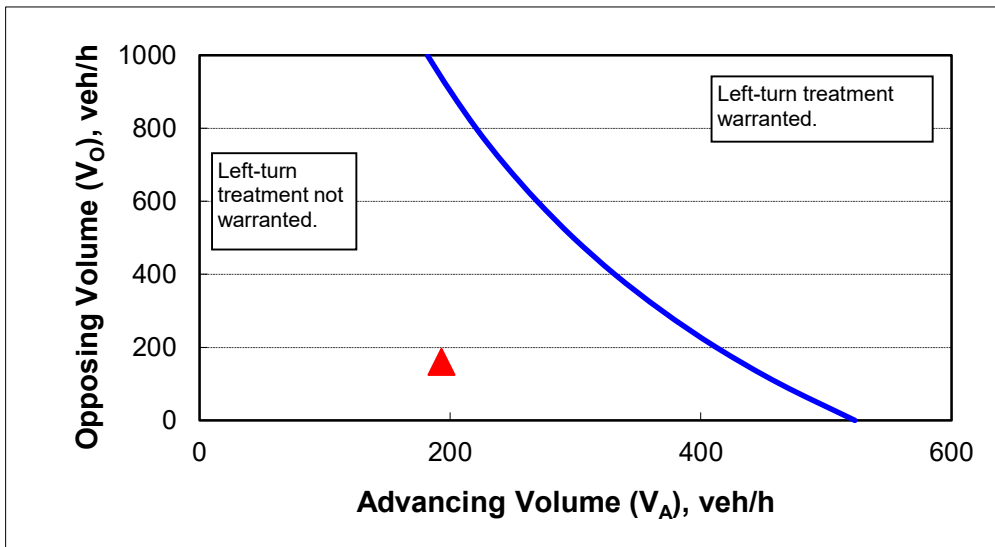
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	11%
Advancing volume (V_A), veh/h:	193
Opposing volume (V_O), veh/h:	160

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	432
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 4 Main Site Access & NW Ridge Road
 Date: 8/16/2023
 Scenario: 2025 Buildout Conditions - AM Peak Hour (SB)

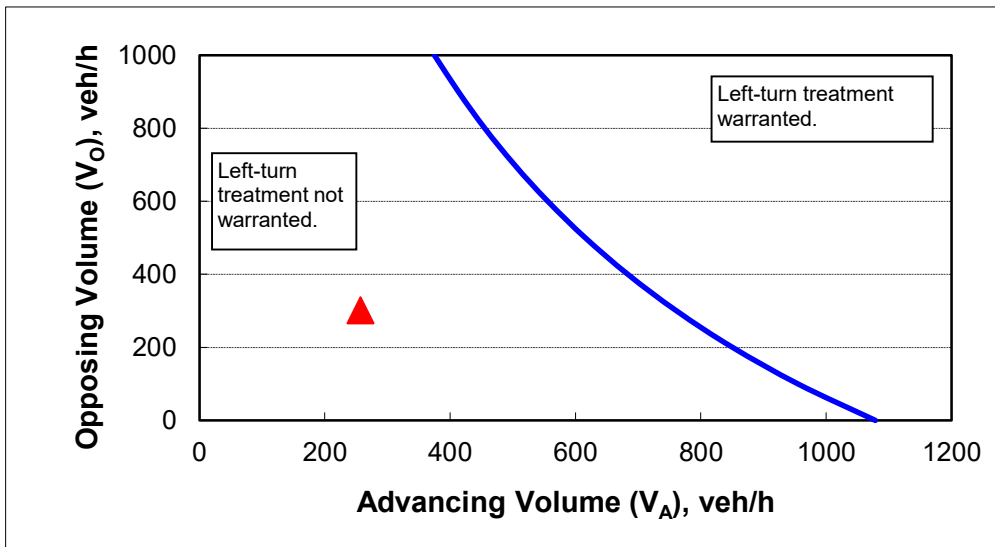
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	2%
Advancing volume (V_A), veh/h:	257
Opposing volume (V_O), veh/h:	301

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	760
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 4 Main Site Access & NW Ridge Road
 Date: 8/16/2023
 Scenario: 2025 Buildout Conditions - PM Peak Hour (SB)

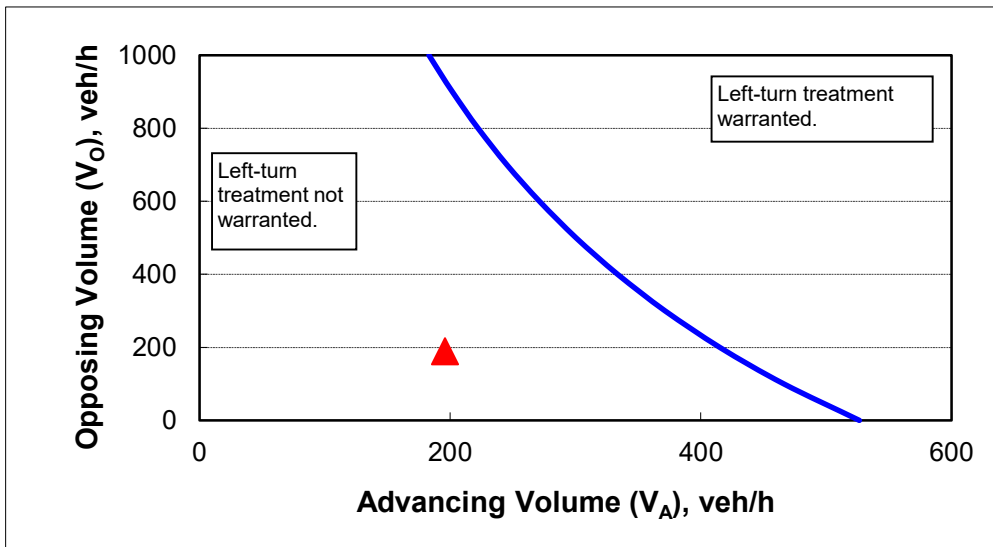
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	11%
Advancing volume (V_A), veh/h:	196
Opposing volume (V_O), veh/h:	189

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	420
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 5 South Site Access & NW Ridge Road
 Date: 8/16/2023
 Scenario: 2025 Buildout Conditions - AM Peak Hour (SB)

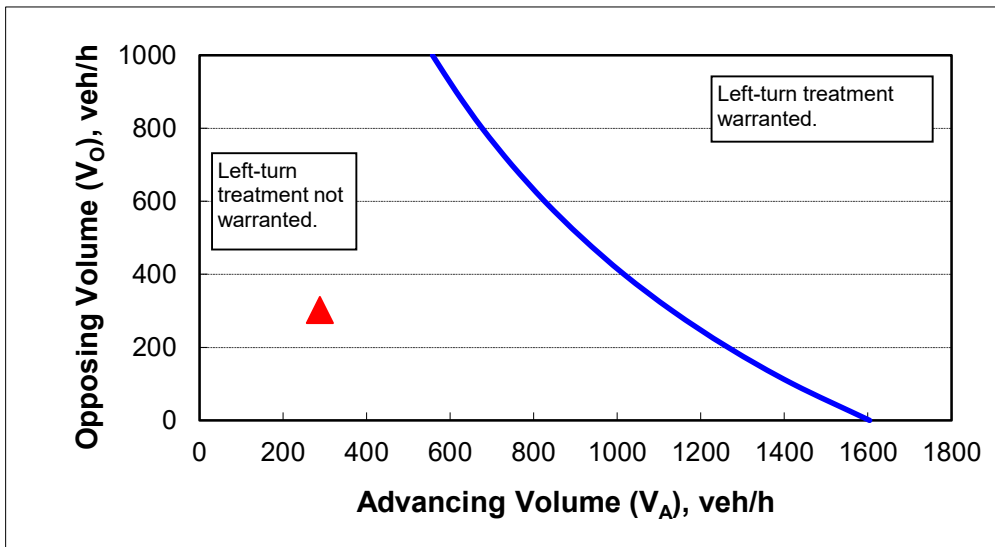
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	1%
Advancing volume (V_A), veh/h:	288
Opposing volume (V_O), veh/h:	302

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	1130
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 5 South Site Access & NW Ridge Road
 Date: 8/16/2023
 Scenario: 2025 Buildout Conditions - PM Peak Hour (SB)

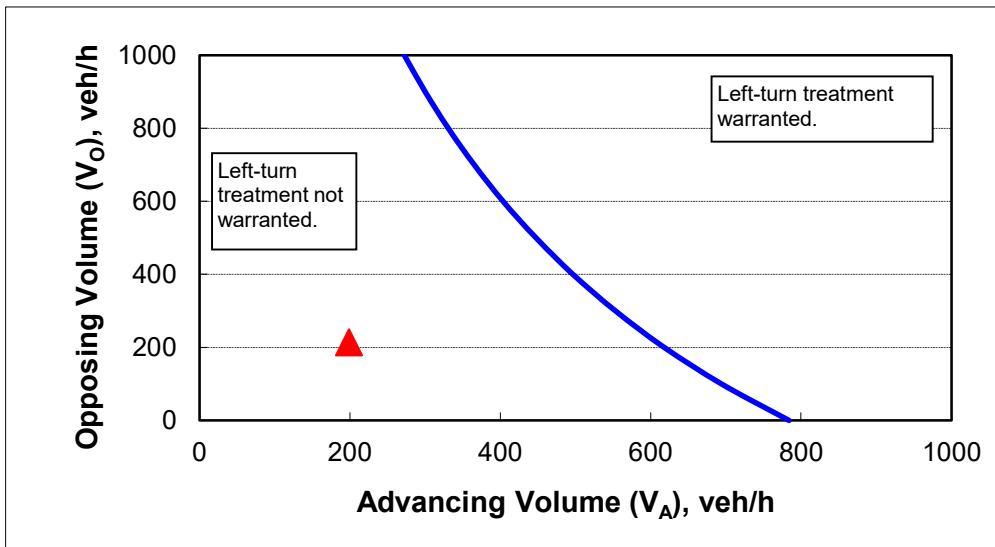
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	5%
Advancing volume (V_A), veh/h:	199
Opposing volume (V_O), veh/h:	214

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	608
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 6 SW 9th Street & NW Ridge Road
 Date: 8/16/2023
 Scenario: 2025 Buildout Conditions - AM Peak Hour (SB)

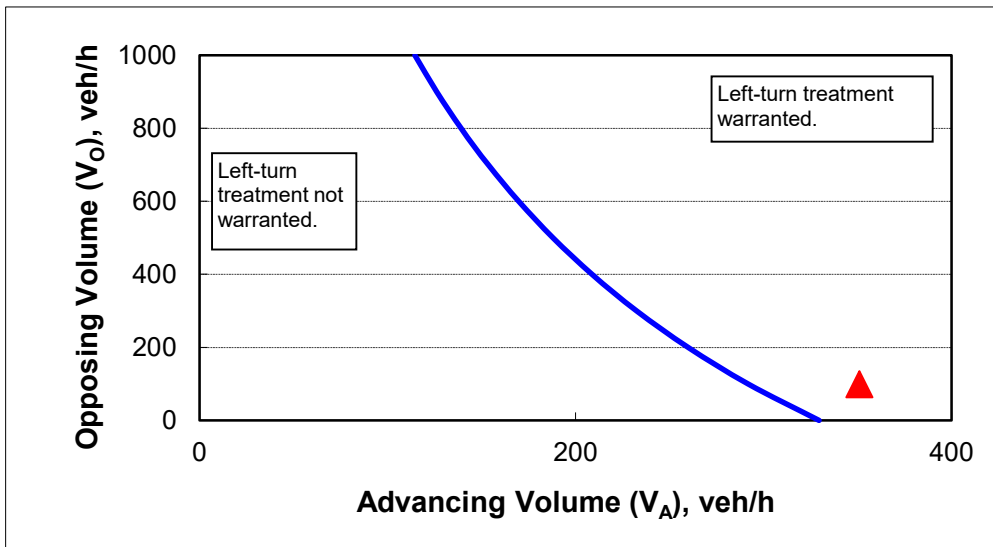
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	42%
Advancing volume (V_A), veh/h:	351
Opposing volume (V_O), veh/h:	99

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	292
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 6 SW 9th Street & NW Ridge Road
 Date: 8/16/2023
 Scenario: 2025 Background Conditions - AM Peak Hour (SB)

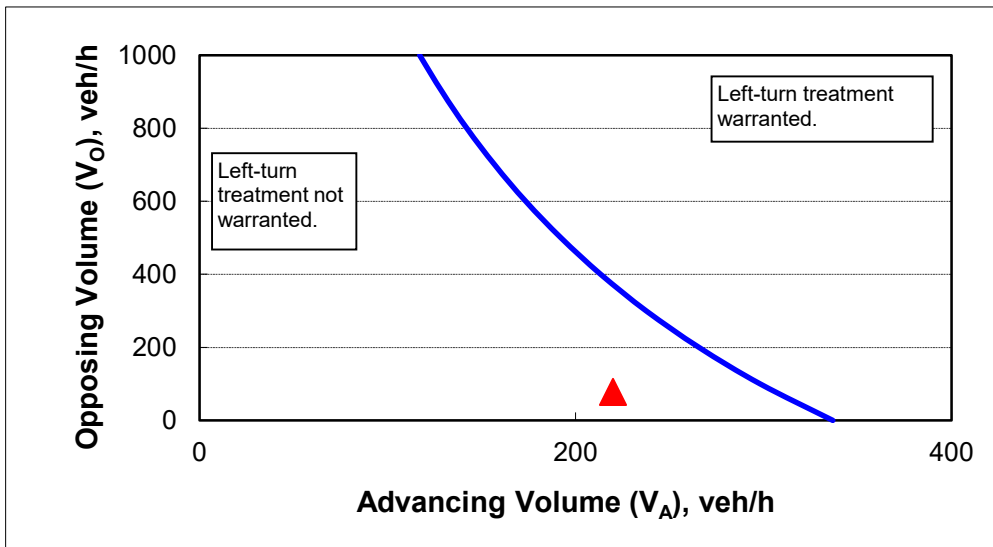
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	37%
Advancing volume (V_A), veh/h:	220
Opposing volume (V_O), veh/h:	78

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	306
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 6 SW 9th Street & NW Ridge Road
 Date: 8/16/2023
 Scenario: 2025 Buildout Conditions - PM Peak Hour (SB)

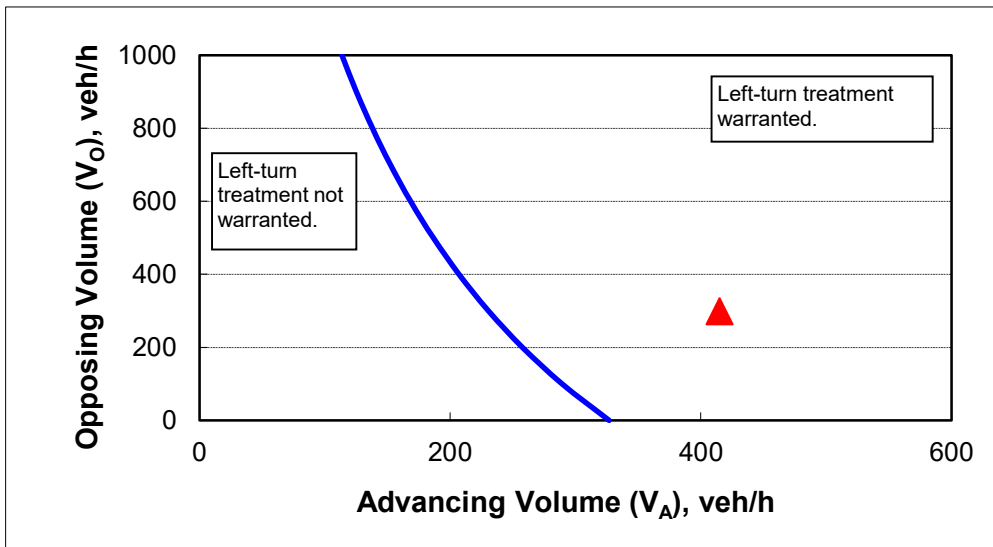
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	46%
Advancing volume (V_A), veh/h:	415
Opposing volume (V_O), veh/h:	299

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	231
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 6 SW 9th Street & NW Ridge Road
 Date: 8/16/2023
 Scenario: 2025 Background Conditions - PM Peak Hour (SB)

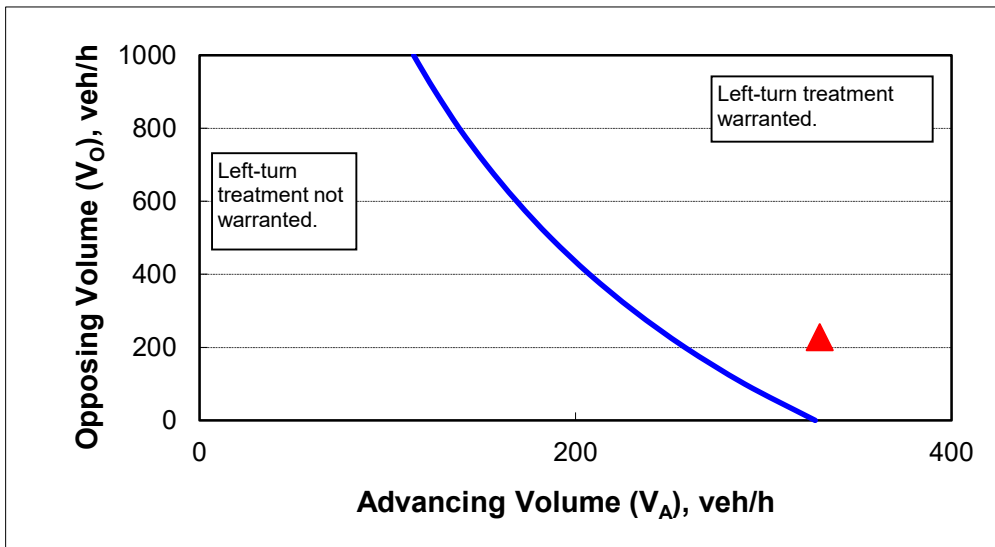
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	45%
Advancing volume (V_A), veh/h:	330
Opposing volume (V_O), veh/h:	228

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	250
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 6 SW 9th Street & NW Ridge Road
 Date: 8/16/2023
 Scenario: 2023 Existing Conditions - PM Peak Hour (SB)

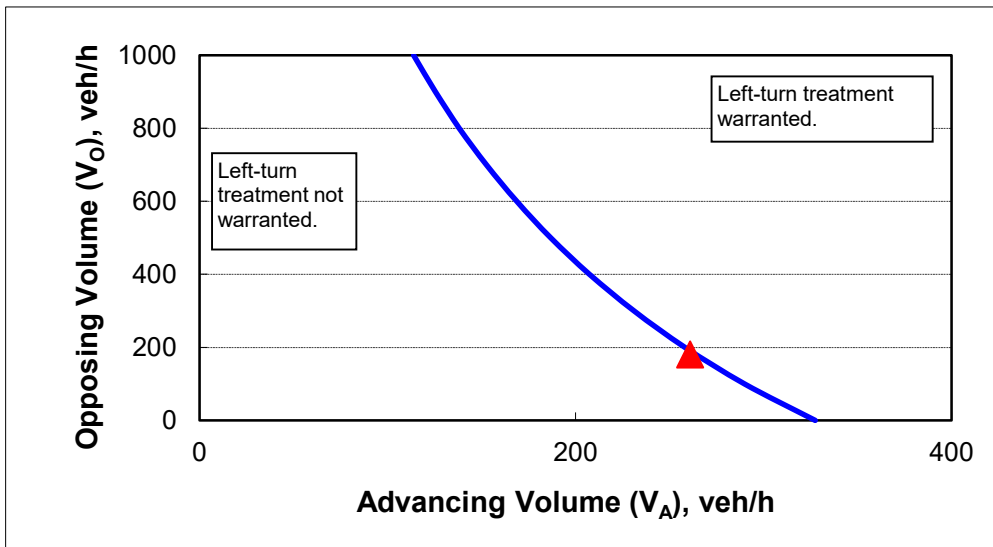
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	45%
Advancing volume (V_A), veh/h:	261
Opposing volume (V_O), veh/h:	180

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	264
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 7 18th Street & Delaura Beach Lane
 Date: 8/16/2023
 Scenario: 2025 Buildout Conditions - AM Peak Hour (SB)

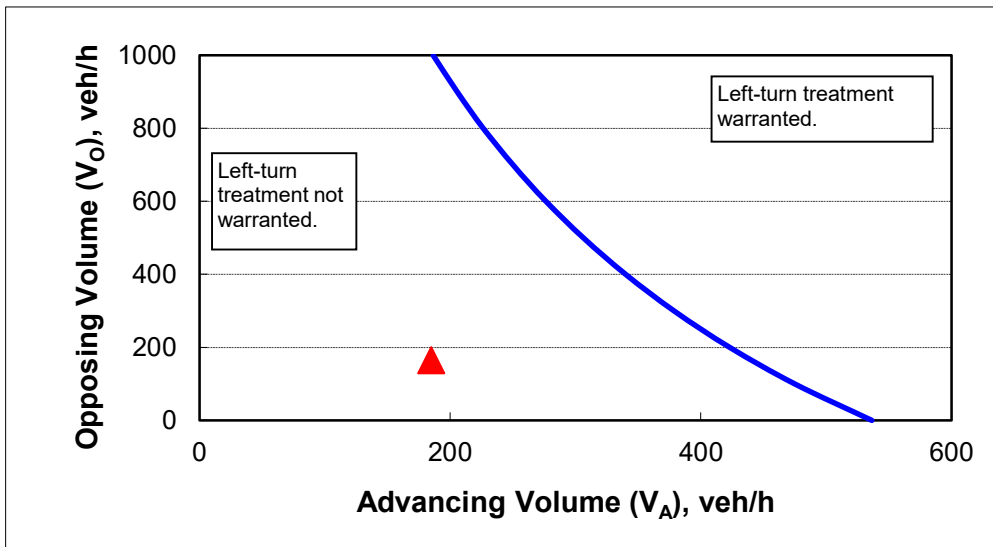
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	10%
Advancing volume (V_A), veh/h:	185
Opposing volume (V_O), veh/h:	165

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	440
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 7 18th Street & Delaura Beach Lane
 Date: 8/16/2023
 Scenario: 2025 Buildout Conditions - PM Peak Hour (SB)

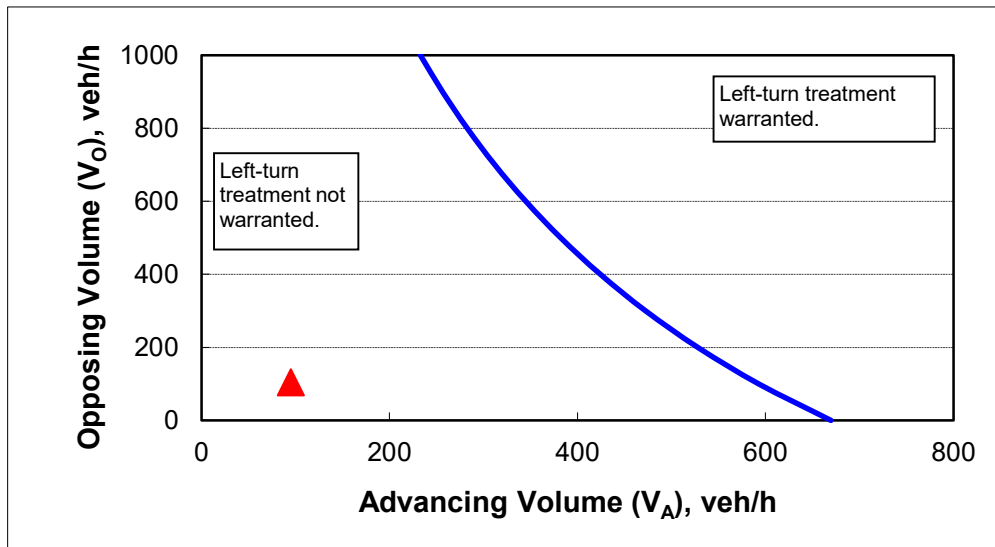
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	6%
Advancing volume (V_A), veh/h:	95
Opposing volume (V_O), veh/h:	104

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	590
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 11 SW 9th Street & S Main Avenue (OR 104)
 Date: 8/16/2023
 Scenario: 2025 Buildout Conditions - AM Peak Hour (SB)

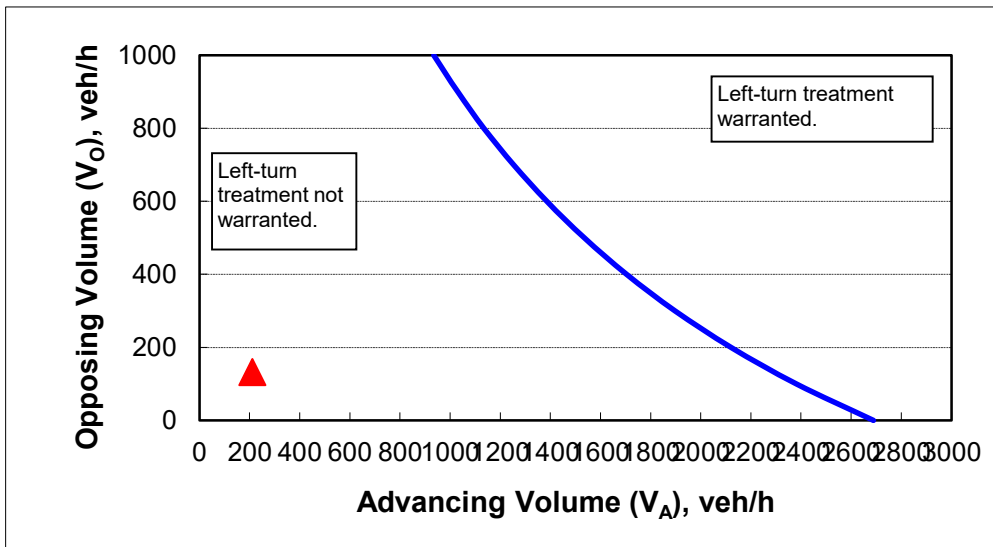
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	0%
Advancing volume (V_A), veh/h:	211
Opposing volume (V_O), veh/h:	132

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	2293
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 11 SW 9th Street & S Main Avenue (OR 104)
 Date: 8/16/2023
 Scenario: 2025 Buildout Conditions - PM Peak Hour (SB)

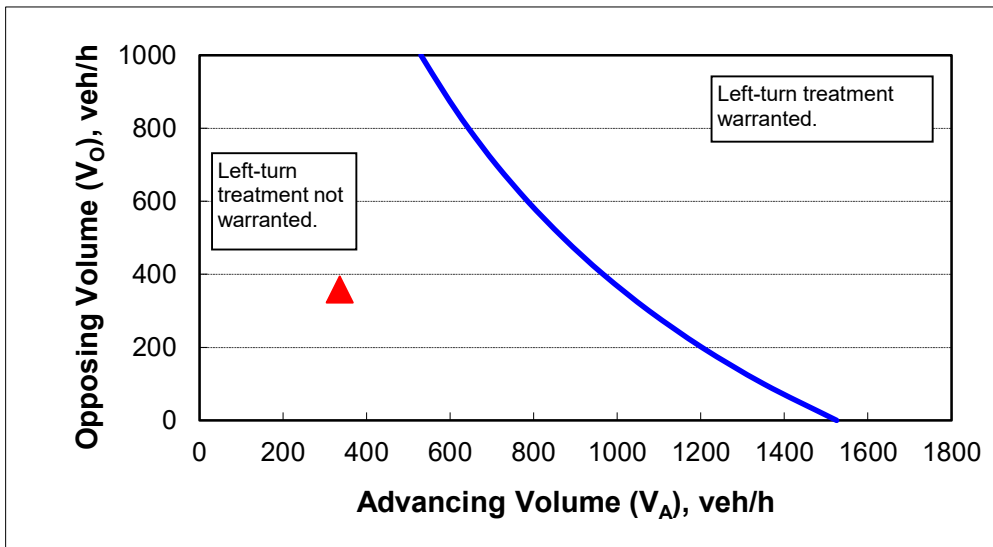
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	1%
Advancing volume (V_A), veh/h:	336
Opposing volume (V_O), veh/h:	358

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	1011
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 11 SW 9th Street & S Main Avenue (OR 104)
 Date: 8/16/2023
 Scenario: 2025 Buildout Conditions - AM Peak Hour (NB)

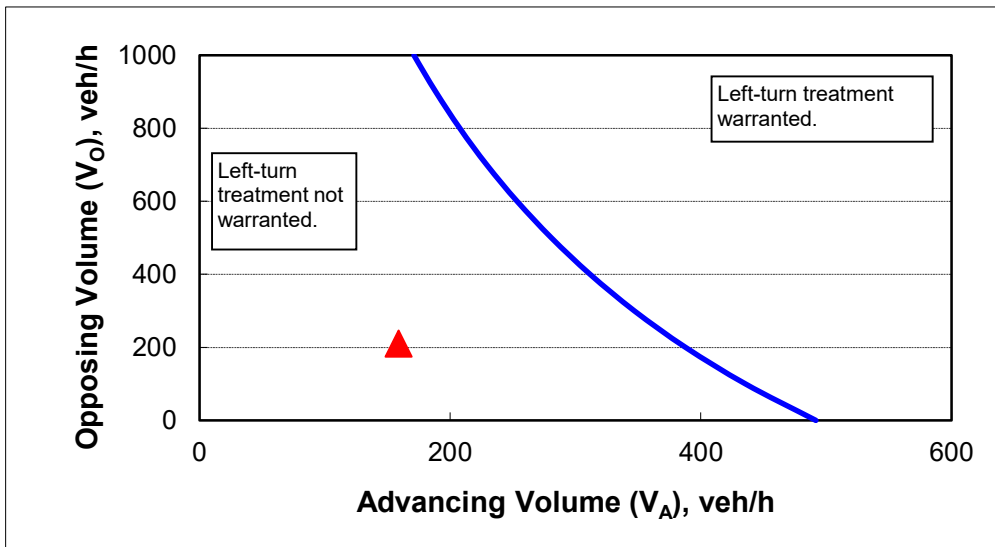
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	17%
Advancing volume (V_A), veh/h:	159
Opposing volume (V_O), veh/h:	210

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	384
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 11 SW 9th Street & S Main Avenue (OR 104)
 Date: 8/16/2023
 Scenario: 2025 Buildout Conditions - PM Peak Hour (NB)

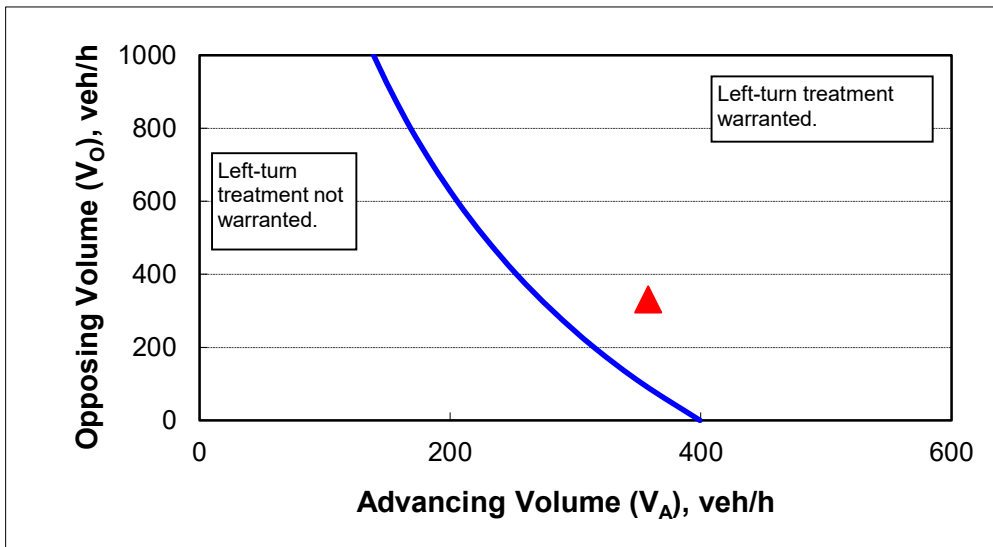
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	31%
Advancing volume (V_A), veh/h:	358
Opposing volume (V_O), veh/h:	331

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	272
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 11 SW 9th Street & S Main Avenue (OR 104)
 Date: 8/16/2023
 Scenario: 2025 Background Conditions - PM Peak Hour (NB)

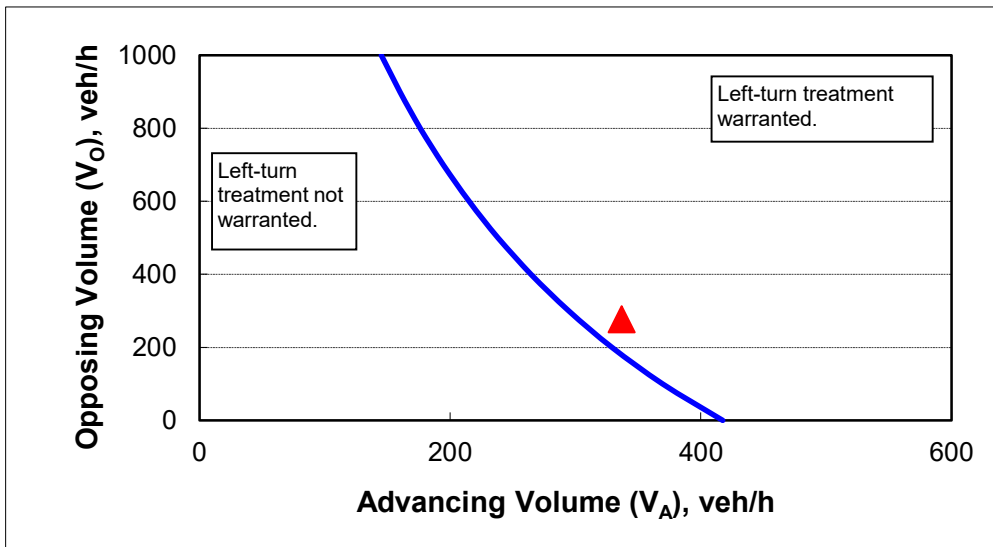
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	27%
Advancing volume (V_A), veh/h:	337
Opposing volume (V_O), veh/h:	277

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	302
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 11 SW 9th Street & S Main Avenue (OR 104)
 Date: 8/16/2023
 Scenario: 2025 Existing Conditions - PM Peak Hour (NB)

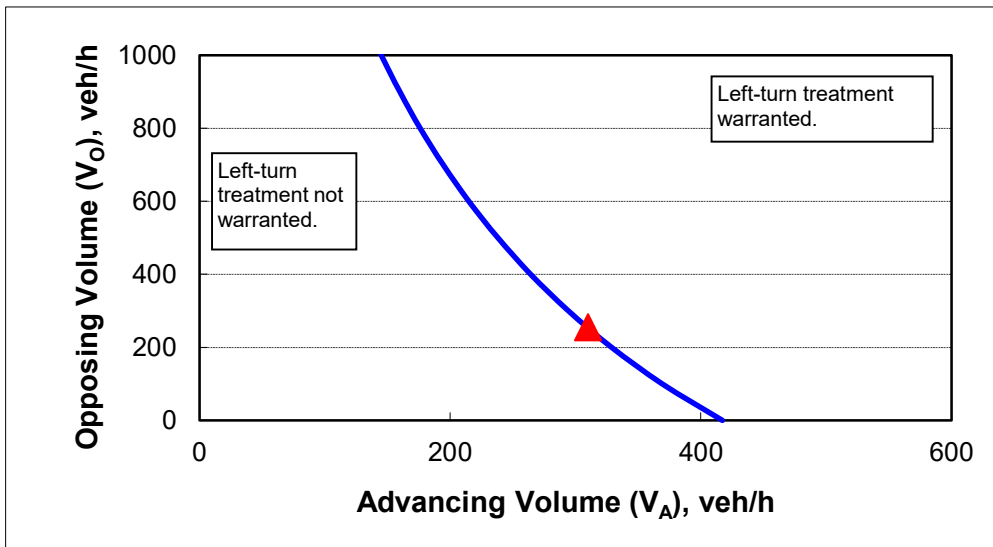
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	27%
Advancing volume (V_A), veh/h:	310
Opposing volume (V_O), veh/h:	255

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	309
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 13 SW 18th Street & Main Street (OR 104)
 Date: 8/16/2023
 Scenario: 2025 Buildout Conditions - AM Peak Hour (NB)

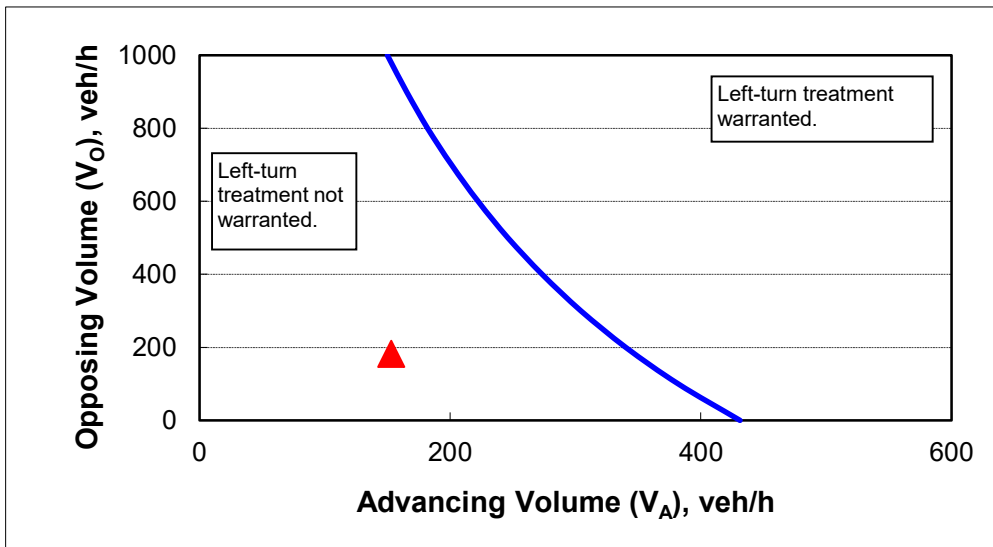
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	24%
Advancing volume (V_A), veh/h:	153
Opposing volume (V_O), veh/h:	182

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	347
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 13 SW 18th Street & Main Street (OR 104)
 Date: 8/16/2023
 Scenario: 2025 Buildout Conditions - PM Peak Hour (NB)

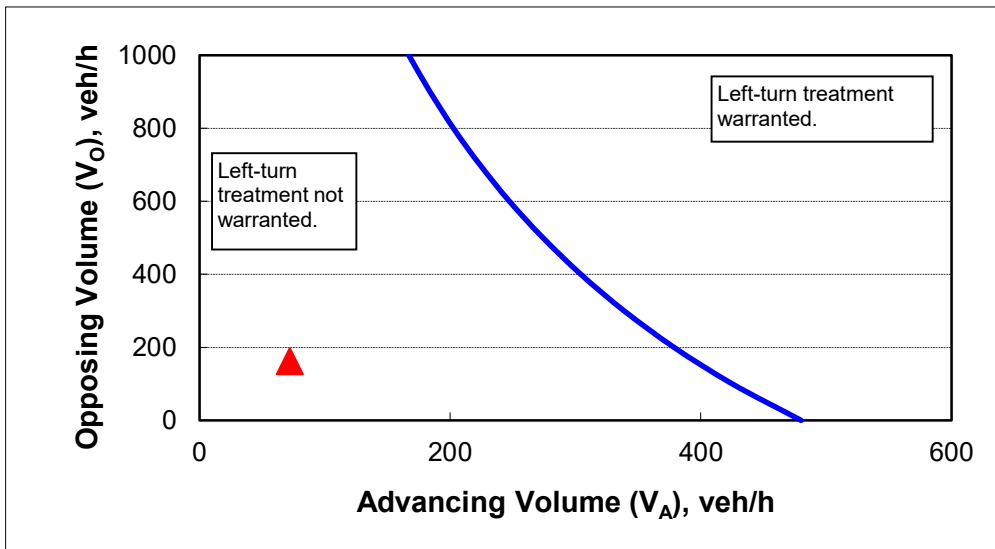
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	18%
Advancing volume (V_A), veh/h:	72
Opposing volume (V_O), veh/h:	162

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	395
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 15 SE Ensign Lane & Fort Stevens Highway (OR 104S)
 Date: 8/16/2023
 Scenario: 2025 Buildout Conditions - AM Peak Hour (SB)

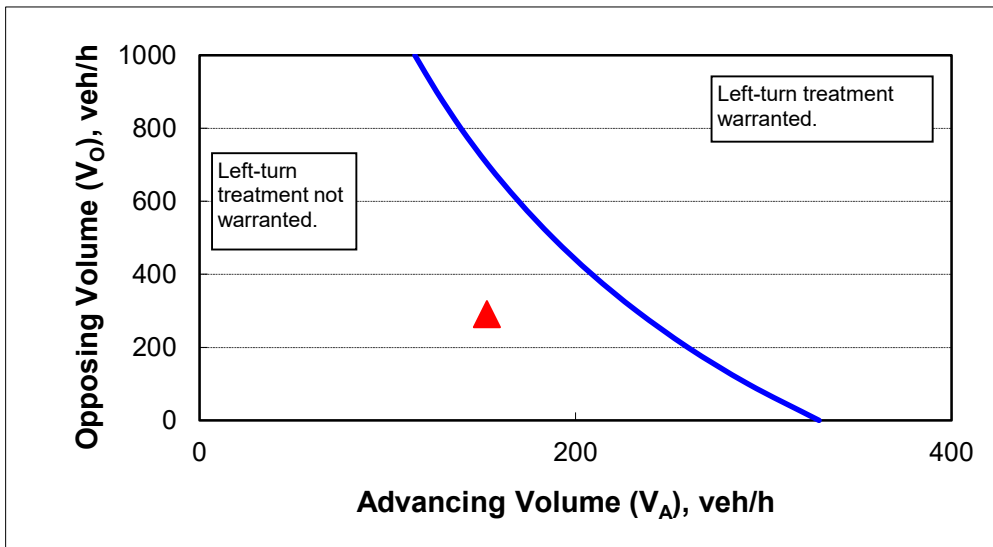
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	42%
Advancing volume (V_A), veh/h:	153
Opposing volume (V_O), veh/h:	291

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	235
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Left-Turn Lane Warrant Analysis



Project: 23073 - Fort Pointe
 Intersection: 15 SE Ensign Lane & Fort Stevens Highway (OR 104S)
 Date: 8/16/2023
 Scenario: 2025 Buildout Conditions - PM Peak Hour (SB)

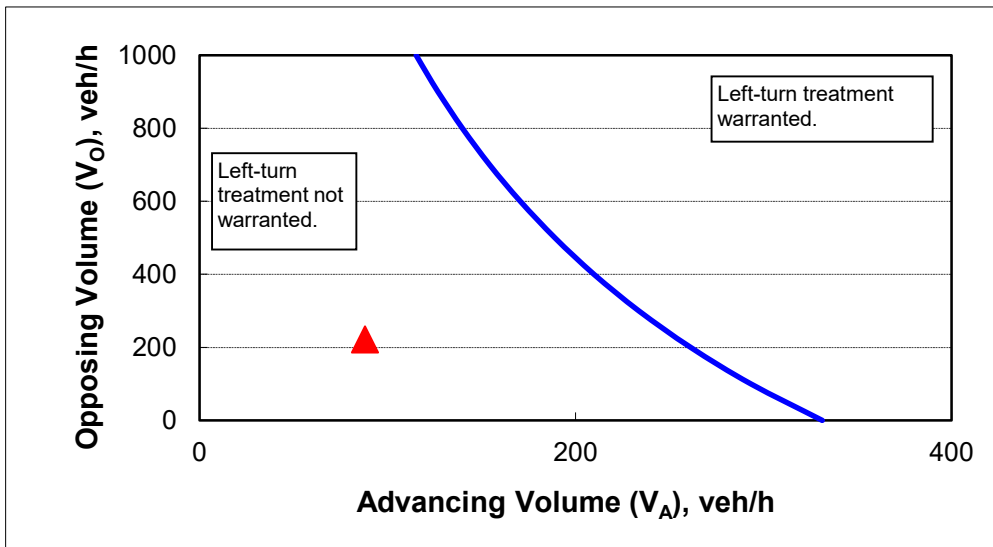
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	45
Percent of left-turns in advancing volume (V_A), %:	41%
Advancing volume (V_A), veh/h:	88
Opposing volume (V_O), veh/h:	222

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	255
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Traffic Signal Warrant Analysis



Project: 23073 - Fort Pointe
 Date: 8/16/2023
 Scenario: Year 2031 Buildout Conditions

Major Street:	Pacific Drive	Minor Street:	Lake Drive
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	125	PM Peak Hour Volumes:	85

Warrant Used:

 X 100 percent of standard warrants used
 70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
<u>Major St.</u>	<u>Minor St.</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>
WARRANT 1, CONDITION A					
		100%	70%	100%	70%
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.65% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	1,250	8,850	
Minor Street*	850	2,650	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	1,250	13,300	
Minor Street*	850	1,350	No
<i>Combination Warrant</i>			
Major Street	1,250	10,640	
Minor Street*	850	2,120	No

* Minor street right-turning traffic volumes reduced by 85% of the turn capacity.

Traffic Signal Warrant Analysis



Project: 23073 - Fort Pointe
 Date: 8/16/2023
 Scenario: Year 2031 Buildout Conditions

Major Street:	Ridge Road	Minor Street:	Peter Iredole Road
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	291	PM Peak Hour Volumes:	52

Warrant Used:

<u> </u>	100 percent of standard warrants used
<u> X </u>	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
<u>Major St.</u>	<u>Minor St.</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>
WARRANT 1, CONDITION A					
		100%	70%	100%	70%
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.65% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	2,910	6,200	
Minor Street*	520	1,850	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	2,910	9,300	
Minor Street*	520	950	No
<i>Combination Warrant</i>			
Major Street	2,910	7,440	
Minor Street*	520	1,480	No

* Minor street right-turning traffic volumes reduced by 25%

Traffic Signal Warrant Analysis



Project: 23073 - Fort Pointe
 Date: 8/16/2023
 Scenario: Year 2031 Buildout Conditions

Major Street:	Ridge Road	Minor Street:	North Access
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	353	PM Peak Hour Volumes:	33

Warrant Used:

	100 percent of standard warrants used
X	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
<u>Major St.</u>	<u>Minor St.</u>	<u>100% Warrants</u>	<u>70% Warrants</u>	<u>100% Warrants</u>	<u>70% Warrants</u>
WARRANT 1, CONDITION A					
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.65% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	3,530	6,200	
Minor Street*	330	1,850	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	3,530	9,300	
Minor Street*	330	950	No
<i>Combination Warrant</i>			
Major Street	3,530	7,440	
Minor Street*	330	1,480	No

* Minor street right-turning traffic volumes reduced by 25%

Traffic Signal Warrant Analysis



Project: 23073 - Fort Pointe
 Date: 8/16/2023
 Scenario: Year 2031 Buildout Conditions

Major Street:	Ridge Road	Minor Street:	Main Access
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	385	PM Peak Hour Volumes:	33

Warrant Used:

<u> </u>	100 percent of standard warrants used
<u> X </u>	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
<u>Major St.</u>	<u>Minor St.</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>
WARRANT 1, CONDITION A					
		100%	70%	100%	70%
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.65% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	3,850	6,200	
Minor Street*	330	1,850	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	3,850	9,300	
Minor Street*	330	950	No
<i>Combination Warrant</i>			
Major Street	3,850	7,440	
Minor Street*	330	1,480	No

* Minor street right-turning traffic volumes reduced by 25%

Traffic Signal Warrant Analysis



Project: 23073 - Fort Pointe
 Date: 8/16/2023
 Scenario: Year 2031 Buildout Conditions

Major Street:	Ridge Road	Minor Street:	South Access
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	413	PM Peak Hour Volumes:	23

Warrant Used:

<u> </u>	100 percent of standard warrants used
<u> X </u>	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
<u>Major St.</u>	<u>Minor St.</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>
WARRANT 1, CONDITION A					
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.65% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	4,130	6,200	
Minor Street*	230	1,850	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	4,130	9,300	
Minor Street*	230	950	No
<i>Combination Warrant</i>			
Major Street	4,130	7,440	
Minor Street*	230	1,480	No

* Minor street right-turning traffic volumes reduced by 25%

Traffic Signal Warrant Analysis



Project: 23073 - Fort Pointe
 Date: 8/16/2023
 Scenario: Year 2031 Buildout Conditions

Major Street:	Ridge Road	Minor Street:	9th Street
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	714	PM Peak Hour Volumes:	155

Warrant Used:

<u> </u>	100 percent of standard warrants used
<u> X </u>	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
<u>Major St.</u>	<u>Minor St.</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>
WARRANT 1, CONDITION A					
		100%	70%	100%	70%
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.65% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	7,140	6,200	
Minor Street*	1,550	1,850	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	7,140	9,300	
Minor Street*	1,550	950	No
<i>Combination Warrant</i>			
Major Street	7,140	7,440	
Minor Street*	1,550	1,480	No

* Minor street right-turning traffic volumes reduced by 25%

Traffic Signal Warrant Analysis



Project: 23073 - Fort Pointe
 Date: 8/16/2023
 Scenario: Year 2031 Buildout Conditions

Major Street:	Ridge Road	Minor Street:	18th Street
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	199	PM Peak Hour Volumes:	55

Warrant Used:

	100 percent of standard warrants used
X	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
<u>Major St.</u>	<u>Minor St.</u>	<u>100% Warrants</u>	<u>70% Warrants</u>	<u>100% Warrants</u>	<u>70% Warrants</u>
WARRANT 1, CONDITION A					
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.65% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	1,990	6,200	
Minor Street*	550	1,850	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	1,990	9,300	
Minor Street*	550	950	No
<i>Combination Warrant</i>			
Major Street	1,990	7,440	
Minor Street*	550	1,480	No

* Minor street right-turning traffic volumes reduced by 25%

Traffic Signal Warrant Analysis



Project: 23073 - Fort Pointe
 Date: 8/16/2023
 Scenario: Year 2031 Buildout Conditions

Major Street:	Ridge Road	Minor Street:	Delaura Beach Road
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	154	PM Peak Hour Volumes:	8

Warrant Used:

	100 percent of standard warrants used
X	70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
<u>Major St.</u>	<u>Minor St.</u>	<u>100% Warrants</u>	<u>70% Warrants</u>	<u>100% Warrants</u>	<u>70% Warrants</u>
WARRANT 1, CONDITION A					
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.65% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	1,540	6,200	
Minor Street*	80	1,850	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	1,540	9,300	
Minor Street*	80	950	No
<i>Combination Warrant</i>			
Major Street	1,540	7,440	
Minor Street*	80	1,480	No

* Minor street right-turning traffic volumes reduced by 25%

Traffic Signal Warrant Analysis



Project: 23073 - Fort Pointe
 Date: 8/16/2023
 Scenario: Year 2031 Buildout Conditions

Major Street:	Habor Street	Minor Street:	Main Avenue (OR 104)
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	523	PM Peak Hour Volumes:	235

Warrant Used:

 X 100 percent of standard warrants used
 70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
<u>Major St.</u>	<u>Minor St.</u>	<u>100% Warrants</u>	<u>70% Warrants</u>	<u>100% Warrants</u>	<u>70% Warrants</u>
WARRANT 1, CONDITION A					
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.65% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	5,230	8,850	
Minor Street*	2,350	2,650	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	5,230	13,300	
Minor Street*	2,350	1,350	No
<i>Combination Warrant</i>			
Major Street	5,230	10,640	
Minor Street*	2,350	2,120	No

* Minor street right-turning traffic volumes reduced by 85% of the turn capacity.

Traffic Signal Warrant Analysis



Project: 23073 - Fort Pointe
 Date: 8/16/2023
 Scenario: Year 2031 Buildout Conditions

Major Street:	9th Street	Minor Street:	SW Cedar Avenue
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	321	PM Peak Hour Volumes:	39

Warrant Used:

 X 100 percent of standard warrants used
 70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
<u>Major St.</u>	<u>Minor St.</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>
WARRANT 1, CONDITION A					
		100%	70%	100%	70%
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.65% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	3,210	8,850	
Minor Street*	390	2,650	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	3,210	13,300	
Minor Street*	390	1,350	No
<i>Combination Warrant</i>			
Major Street	3,210	10,640	
Minor Street*	390	2,120	No

* Minor street right-turning traffic volumes reduced by 25%

Traffic Signal Warrant Analysis



Project: 23073 - Fort Pointe
 Date: 8/16/2023
 Scenario: Year 2031 Buildout Conditions

Major Street:	Main Avenue (OR 104)	Minor Street:	9th Street
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	694	PM Peak Hour Volumes:	356

Warrant Used:

 X 100 percent of standard warrants used
 70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
<u>Major St.</u>	<u>Minor St.</u>	<u>100% Warrants</u>	<u>70% Warrants</u>	<u>100% Warrants</u>	<u>70% Warrants</u>
WARRANT 1, CONDITION A					
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.65% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	6,940	8,850	
Minor Street*	3,560	2,650	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	6,940	13,300	
Minor Street*	3,560	1,350	No
<i>Combination Warrant</i>			
Major Street	6,940	10,640	
Minor Street*	3,560	2,120	No

* Minor street right-turning traffic volumes reduced by 85% of the turn capacity.

Traffic Signal Warrant Analysis



Project: 23073 - Fort Pointe
 Date: 8/16/2023
 Scenario: Year 2031 Buildout Conditions

Major Street:	Main Avenue (OR 104)	Minor Street:	Fort Steven Highway (OR 104)
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	389	PM Peak Hour Volumes:	79

Warrant Used:

 X 100 percent of standard warrants used
 70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
<u>Major St.</u>	<u>Minor St.</u>	<u>100% Warrants</u>	<u>70% Warrants</u>	<u>100% Warrants</u>	<u>70% Warrants</u>
WARRANT 1, CONDITION A					
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.65% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	3,890	8,850	
Minor Street*	790	2,650	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	3,890	13,300	
Minor Street*	790	1,350	No
<i>Combination Warrant</i>			
Major Street	3,890	10,640	
Minor Street*	790	2,120	No

* Minor street right-turning traffic volumes reduced by 85% of the turn capacity.

Traffic Signal Warrant Analysis



Project: 23073 - Fort Pointe
 Date: 8/16/2023
 Scenario: Year 2031 Buildout Conditions

Major Street:	Main Avenue (OR 104)	Minor Street:	18th Street
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	234	PM Peak Hour Volumes:	88

Warrant Used:

 X 100 percent of standard warrants used
 70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
<u>Major St.</u>	<u>Minor St.</u>	<u>100% Warrants</u>	<u>70% Warrants</u>	<u>100% Warrants</u>	<u>70% Warrants</u>
WARRANT 1, CONDITION A					
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.65% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	2,340	8,850	
Minor Street*	880	2,650	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	2,340	13,300	
Minor Street*	880	1,350	No
<i>Combination Warrant</i>			
Major Street	2,340	10,640	
Minor Street*	880	2,120	No

* Minor street right-turning traffic volumes reduced by 85% of the turn capacity.

Traffic Signal Warrant Analysis



Project: 23073 - Fort Pointe
 Date: 8/16/2023
 Scenario: Year 2031 Buildout Conditions

Major Street: Fort Steven Highway (OR 104S) Minor Street: Ensign Lane
 Number of Lanes: 1 Number of Lanes: 1
 PM Peak Hour Volumes: 310 PM Peak Hour Volumes: 140

Warrant Used:

 X 100 percent of standard warrants used
 70 percent of standard warrants used due to 85th percentile speed in excess of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
<u>Major St.</u>	<u>Minor St.</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>
WARRANT 1, CONDITION A					
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
WARRANT 1, CONDITION B					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.65% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
Warrant 1			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	3,100	8,850	
Minor Street*	1,400	2,650	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	3,100	13,300	
Minor Street*	1,400	1,350	No
<i>Combination Warrant</i>			
Major Street	3,100	10,640	
Minor Street*	1,400	2,120	No

* Minor street right-turning traffic volumes reduced by 85% of the turn capacity.

Appendix D – Operations

Definitions

Synchro Reports

Queuing Reports





Level of Service Definitions

Level of service is used to describe the quality of traffic flow. Levels of service A to C are considered good, and rural roads are usually designed for level of service C. Urban streets and signalized intersections are typically designed for level of service D. Level of service E is considered to be the limit of acceptable delay. For unsignalized intersections, level of service E is generally considered acceptable. Here is a more complete description of levels of service:

- *Level of service A:* Very low delay at intersections, with all traffic signal cycles clearing and no vehicles waiting through more than one signal cycle. On highways, low volume and high speeds, with speeds not restricted by other vehicles.
- *Level of service B:* Operating speeds beginning to be affected by other traffic; short traffic delays at intersections. Higher average intersection delay than for level of service A resulting from more vehicles stopping.
- *Level of service C:* Operating speeds and maneuverability closely controlled by other traffic; higher delays at intersections than for level of service B due to a significant number of vehicles stopping. Not all signal cycles clear the waiting vehicles. This is the recommended design standard for rural highways.
- *Level of service D:* Tolerable operating speeds; long traffic delays occur at intersections. The influence of congestion is noticeable. At traffic signals many vehicles stop, and the proportion of vehicles not stopping declines. The number of signal cycle failures, for which vehicles must wait through more than one signal cycle, are noticeable. This is typically the design level for urban signalized intersections.
- *Level of service E:* Restricted speeds, very long traffic delays at traffic signals, and traffic volumes near capacity. Flow is unstable so that any interruption, no matter how minor, will cause queues to form and service to deteriorate to level of service F. Traffic signal cycle failures are frequent occurrences. For unsignalized intersections, level of service E or better is generally considered acceptable.
- *Level of service F:* Extreme delays, resulting in long queues which may interfere with other traffic movements. There may be stoppages of long duration, and speeds may drop to zero. There may be frequent signal cycle failures. Level of service F will typically result when vehicle arrival rates are greater than capacity. It is considered unacceptable by most drivers.



Level of Service Criteria
For Signalized Intersections

Level of Service (LOS)	Control Delay per Vehicle (Seconds)
A	<10
B	10-20
C	20-35
D	35-55
E	55-80
F	>80

Level of Service Criteria
For Unsignalized Intersections

Level of Service (LOS)	Control Delay per Vehicle (Seconds)
A	<10
B	10-15
C	15-25
D	25-35
E	35-50
F	>50

HCM 6th AWSC
1: NW Ridge Road/Lake Drive & Pacific Drive

08/11/2023

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	27	38	93	44	9	18	25	91	10	14	5
Future Vol, veh/h	2	27	38	93	44	9	18	25	91	10	14	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	1	0	0	0
Mvmt Flow	2	29	41	101	48	10	20	27	99	11	15	5
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.5	8.6	7.9	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	3%	64%	34%
Vol Thru, %	19%	40%	30%	48%
Vol Right, %	68%	57%	6%	17%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	134	67	146	29
LT Vol	18	2	93	10
Through Vol	25	27	44	14
RT Vol	91	38	9	5
Lane Flow Rate	146	73	159	32
Geometry Grp	1	1	1	1
Degree of Util (X)	0.165	0.083	0.197	0.04
Departure Headway (Hd)	4.079	4.123	4.465	4.543
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	881	870	809	789
Service Time	2.094	2.144	2.465	2.563
HCM Lane V/C Ratio	0.166	0.084	0.197	0.041
HCM Control Delay	7.9	7.5	8.6	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.3	0.7	0.1

HCM 6th TWSC
2: NW Ridge Road & Peter Iredale Road

08/11/2023

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕			↕	
Traffic Vol, veh/h	35	5	48	15	11	11	73	97	35	11	81	51
Future Vol, veh/h	35	5	48	15	11	11	73	97	35	11	81	51
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	0	0
Mvmt Flow	38	5	52	16	12	12	79	105	38	12	88	55

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	436	443	117	451	451	126	144	0	0	144	0	0
Stage 1	141	141	-	283	283	-	-	-	-	-	-	-
Stage 2	295	302	-	168	168	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	534	512	941	522	507	930	1451	-	-	1451	-	-
Stage 1	867	784	-	728	681	-	-	-	-	-	-	-
Stage 2	718	668	-	839	763	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	490	477	940	463	472	928	1450	-	-	1450	-	-
Mov Cap-2 Maneuver	490	477	-	463	472	-	-	-	-	-	-	-
Stage 1	815	776	-	684	640	-	-	-	-	-	-	-
Stage 2	654	628	-	780	755	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.9		12.1		2.7		0.6	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1450	-	-	488	940	548	1450	-	-
HCM Lane V/C Ratio	0.055	-	-	0.089	0.056	0.073	0.008	-	-
HCM Control Delay (s)	7.6	0	-	13.1	9.1	12.1	7.5	0	-
HCM Lane LOS	A	A	-	B	A	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.2	0.2	0	-	-

HCM 6th TWSC
 3: NW Ridge Road & North Site Access

08/11/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	TT		TT			TT
Traffic Vol, veh/h	0	0	205	0	0	144
Future Vol, veh/h	0	0	205	0	0	144
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	223	0	0	157

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	380	223	0	0	223	0
Stage 1	223	-	-	-	-	-
Stage 2	157	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	626	822	-	-	1358	-
Stage 1	819	-	-	-	-	-
Stage 2	876	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	626	822	-	-	1358	-
Mov Cap-2 Maneuver	626	-	-	-	-	-
Stage 1	819	-	-	-	-	-
Stage 2	876	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1358	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

HCM 6th TWSC
4: NW Ridge Road & Main Site Access

08/11/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	205	0	0	144
Future Vol, veh/h	0	0	205	0	0	144
Conflicting Peds, #/hr	0	1	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	223	0	0	157

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	380	224	0	0	223
Stage 1	223	-	-	-	-
Stage 2	157	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	626	820	-	-	1358
Stage 1	819	-	-	-	-
Stage 2	876	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	626	819	-	-	1358
Mov Cap-2 Maneuver	626	-	-	-	-
Stage 1	819	-	-	-	-
Stage 2	876	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1358	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 6th TWSC
5: NW Ridge Road & South Site Access

08/11/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	TT		TT			TT
Traffic Vol, veh/h	0	0	205	0	0	144
Future Vol, veh/h	0	0	205	0	0	144
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	223	0	0	157

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	380	225	0	0	223
Stage 1	223	-	-	-	-
Stage 2	157	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	626	819	-	-	1358
Stage 1	819	-	-	-	-
Stage 2	876	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	626	817	-	-	1358
Mov Cap-2 Maneuver	626	-	-	-	-
Stage 1	819	-	-	-	-
Stage 2	876	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1358
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

Intersection						
Int Delay, s/veh	3.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	57	57	5	65	109
Future Vol, veh/h	9	57	57	5	65	109
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	0	4	2	0	0	0
Mvmt Flow	11	72	72	6	82	138

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	377	75	0	0	78
Stage 1	75	-	-	-	-
Stage 2	302	-	-	-	-
Critical Hdwy	6.4	6.24	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.336	-	-	2.2
Pot Cap-1 Maneuver	629	981	-	-	1533
Stage 1	953	-	-	-	-
Stage 2	755	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	593	981	-	-	1533
Mov Cap-2 Maneuver	593	-	-	-	-
Stage 1	953	-	-	-	-
Stage 2	711	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	2.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	901	1533
HCM Lane V/C Ratio	-	-	0.093	0.054
HCM Control Delay (s)	-	-	9.4	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2

HCM 6th TWSC
 7: 18th Street/NW Ridge Road & Delaura Beach Lane

08/11/2023

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	63	15	121	94	5
Future Vol, veh/h	2	63	15	121	94	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	0	2	0	0	0	0
Mvmt Flow	2	76	18	146	113	6

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	298	116	119	0	0
Stage 1	116	-	-	-	-
Stage 2	182	-	-	-	-
Critical Hdwy	6.4	6.22	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.318	2.2	-	-
Pot Cap-1 Maneuver	698	936	1482	-	-
Stage 1	914	-	-	-	-
Stage 2	854	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	689	936	1482	-	-
Mov Cap-2 Maneuver	689	-	-	-	-
Stage 1	902	-	-	-	-
Stage 2	854	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1482	-	926	-	-
HCM Lane V/C Ratio	0.012	-	0.085	-	-
HCM Control Delay (s)	7.5	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

HCM 6th TWSC
 8: NW Ridge Road & Delaura Beach Lane

08/11/2023

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	2	4	21	0	0	2	0	58	0	60	5
Future Vol, veh/h	0	2	4	21	0	0	2	0	58	0	60	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0	0	0	2	0	0	0
Mvmt Flow	0	3	5	28	0	0	3	0	76	0	79	7

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	-	165	83	131	130	-	86	0	0	76	0	0
Stage 1	-	83	-	44	44	-	-	-	-	-	-	-
Stage 2	-	82	-	87	86	-	-	-	-	-	-	-
Critical Hdwy	-	6.5	6.2	7.1	6.5	-	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	-	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	-	4	3.3	3.5	4	-	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	0	731	982	846	764	0	1523	-	-	1536	-	-
Stage 1	0	830	-	975	862	0	-	-	-	-	-	-
Stage 2	0	831	-	926	827	0	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	-	730	982	838	762	-	1523	-	-	1536	-	-
Mov Cap-2 Maneuver	-	730	-	838	762	-	-	-	-	-	-	-
Stage 1	-	830	-	973	860	-	-	-	-	-	-	-
Stage 2	-	829	-	918	827	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.1		9.4		0.2		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1523	-	-	881	838	1536	-
HCM Lane V/C Ratio	0.002	-	-	0.009	0.033	-	-
HCM Control Delay (s)	7.4	0	-	9.1	9.4	0	-
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-

HCM 6th AWSC

9: E Main Avenue (OR 104)/NE Skipanon Drive & Fort Stevens Highway/E Harbor Drive 08/11/2023

Intersection	
Intersection Delay, s/veh	17.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↶	↷		↶	↷
Traffic Vol, veh/h	1	187	95	240	268	37	100	28	169	67	39	2
Future Vol, veh/h	1	187	95	240	268	37	100	28	169	67	39	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	2	1	5	0	4	1	0	0	0
Mvmt Flow	1	208	106	267	298	41	111	31	188	74	43	2
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	19.7	19.2	13.7	14
HCM LOS	C	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	78%	0%	100%	0%	100%	0%	63%	0%
Vol Thru, %	22%	0%	0%	66%	0%	88%	37%	0%
Vol Right, %	0%	100%	0%	34%	0%	12%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	128	169	1	282	240	305	106	2
LT Vol	100	0	1	0	240	0	67	0
Through Vol	28	0	0	187	0	268	39	0
RT Vol	0	169	0	95	0	37	0	2
Lane Flow Rate	142	188	1	313	267	339	118	2
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.311	0.356	0.002	0.603	0.538	0.626	0.271	0.004
Departure Headway (Hd)	7.883	6.834	7.678	6.924	7.265	6.651	8.288	7.24
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	457	526	466	520	496	542	433	494
Service Time	5.626	4.576	5.42	4.666	5.005	4.39	6.038	4.989
HCM Lane V/C Ratio	0.311	0.357	0.002	0.602	0.538	0.625	0.273	0.004
HCM Control Delay	14.2	13.3	10.4	19.7	18.2	19.9	14.1	10
HCM Lane LOS	B	B	B	C	C	C	B	A
HCM 95th-tile Q	1.3	1.6	0	3.9	3.1	4.3	1.1	0

Intersection

Intersection Delay, s/veh 8.4
 Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	109	4	9	132	39	1	3	4	20	1	11
Future Vol, veh/h	20	109	4	9	132	39	1	3	4	20	1	11
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	0	0	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	27	147	5	12	178	53	1	4	5	27	1	15
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.4	8.6	7.7	8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	15%	5%	62%
Vol Thru, %	38%	82%	73%	3%
Vol Right, %	50%	3%	22%	34%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	8	133	180	32
LT Vol	1	20	9	20
Through Vol	3	109	132	1
RT Vol	4	4	39	11
Lane Flow Rate	11	180	243	43
Geometry Grp	1	1	1	1
Degree of Util (X)	0.014	0.209	0.271	0.057
Departure Headway (Hd)	4.585	4.19	4.01	4.734
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	785	843	883	761
Service Time	2.587	2.285	2.099	2.735
HCM Lane V/C Ratio	0.014	0.214	0.275	0.057
HCM Control Delay	7.7	8.4	8.6	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.8	1.1	0.2

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	52	0	49	0	0	4	24	150	0	1	187	34
Future Vol, veh/h	52	0	49	0	0	4	24	150	0	1	187	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	0	0	4	0	0	0	0	5	0	0	3	0
Mvmt Flow	66	0	62	0	0	5	30	190	0	1	237	43

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	515	513	260	543	534	191	281	0	0	191	0	0
Stage 1	262	262	-	251	251	-	-	-	-	-	-	-
Stage 2	253	251	-	292	283	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.24	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.336	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	474	468	774	454	455	856	1293	-	-	1395	-	-
Stage 1	747	695	-	758	703	-	-	-	-	-	-	-
Stage 2	756	703	-	720	681	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	461	454	773	409	442	855	1292	-	-	1394	-	-
Mov Cap-2 Maneuver	461	454	-	409	442	-	-	-	-	-	-	-
Stage 1	727	694	-	738	684	-	-	-	-	-	-	-
Stage 2	732	684	-	662	680	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	13.1		9.2		1.1			0		
HCM LOS	B		A							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1292	-	-	573	855	1394	-	-
HCM Lane V/C Ratio	0.024	-	-	0.223	0.006	0.001	-	-
HCM Control Delay (s)	7.9	0	-	13.1	9.2	7.6	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0	0	-	-

Intersection						
Int Delay, s/veh	11.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	120	260	134	84	180	93
Future Vol, veh/h	120	260	134	84	180	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	125	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	138	299	154	97	207	107

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	724	203	0	0	251
Stage 1	203	-	-	-	-
Stage 2	521	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	396	843	-	-	1326
Stage 1	836	-	-	-	-
Stage 2	600	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	334	843	-	-	1326
Mov Cap-2 Maneuver	422	-	-	-	-
Stage 1	836	-	-	-	-
Stage 2	506	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.8	0	5.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	641	1326
HCM Lane V/C Ratio	-	-	0.681	0.156
HCM Control Delay (s)	-	-	21.8	8.2
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	5.3	0.6

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	71	46	42	132	90	103
Future Vol, veh/h	71	46	42	132	90	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	89	58	53	165	113	129

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	449	178	242	0	0
Stage 1	178	-	-	-	-
Stage 2	271	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	571	870	1336	-	-
Stage 1	858	-	-	-	-
Stage 2	779	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	546	870	1336	-	-
Mov Cap-2 Maneuver	613	-	-	-	-
Stage 1	820	-	-	-	-
Stage 2	779	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.9	1.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1336	-	613	870	-	-
HCM Lane V/C Ratio	0.039	-	0.145	0.066	-	-
HCM Control Delay (s)	7.8	0	11.9	9.4	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	0.2	-	-

HCM Signalized Intersection Capacity Analysis
 14: US 101 & E Harbor Drive

08/11/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	282	32	32	638	575	350
Future Volume (vph)	282	32	32	638	575	350
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.5	4.5	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1646	1488	1662	1733	1733	1458
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1646	1488	1662	1733	1733	1458
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	291	33	33	658	593	361
RTOR Reduction (vph)	0	24	0	0	0	84
Lane Group Flow (vph)	291	9	33	658	593	277
Heavy Vehicles (%)	1%	0%	0%	1%	1%	2%
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	8		1	6	2	8
Permitted Phases		8				2
Actuated Green, G (s)	16.7	16.7	1.8	36.2	30.4	47.1
Effective Green, g (s)	16.7	16.7	1.8	36.2	30.4	47.1
Actuated g/C Ratio	0.27	0.27	0.03	0.59	0.50	0.77
Clearance Time (s)	4.0	4.0	4.0	4.5	4.5	4.0
Vehicle Extension (s)	2.5	2.5	2.5	6.2	6.2	2.5
Lane Grp Cap (vph)	447	404	48	1021	858	1118
v/s Ratio Prot	c0.18		0.02	c0.38	0.34	0.07
v/s Ratio Perm		0.01				0.12
v/c Ratio	0.65	0.02	0.69	0.64	0.69	0.25
Uniform Delay, d1	19.8	16.4	29.5	8.3	11.9	2.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	0.0	31.3	2.4	3.7	0.1
Delay (s)	22.8	16.4	60.8	10.7	15.6	2.1
Level of Service	C	B	E	B	B	A
Approach Delay (s)	22.1			13.1	10.5	
Approach LOS	C			B	B	

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	61.4	Sum of lost time (s)	12.5
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Signalized Intersection Summary
 14: US 101 & E Harbor Drive

08/11/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	282	32	32	638	575	350
Future Volume (veh/h)	282	32	32	638	575	350
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1736	1750	1750	1736	1736	1723
Adj Flow Rate, veh/h	291	12	33	658	593	279
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	0	0	1	1	2
Cap, veh/h	354	317	58	1126	952	1113
Arrive On Green	0.21	0.21	0.04	0.65	0.55	0.55
Sat Flow, veh/h	1654	1483	1667	1736	1736	1460
Grp Volume(v), veh/h	291	12	33	658	593	279
Grp Sat Flow(s),veh/h/ln	1654	1483	1667	1736	1736	1460
Q Serve(g_s), s	10.4	0.4	1.2	13.2	14.4	3.5
Cycle Q Clear(g_c), s	10.4	0.4	1.2	13.2	14.4	3.5
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	354	317	58	1126	952	1113
V/C Ratio(X)	0.82	0.04	0.57	0.58	0.62	0.25
Avail Cap(c_a), veh/h	697	625	170	1562	1272	1382
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.1	19.2	29.3	6.1	9.5	2.2
Incr Delay (d2), s/veh	3.6	0.0	6.2	2.0	2.7	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.1	0.5	3.2	4.5	1.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.8	19.3	35.5	8.1	12.3	2.6
LnGrp LOS	C	B	D	A	B	A
Approach Vol, veh/h	303			691	872	
Approach Delay, s/veh	26.5			9.4	9.2	
Approach LOS	C			A	A	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.2	38.3			44.5	17.2
Change Period (Y+Rc), s	4.0	4.5			4.5	4.0
Max Green Setting (Gmax), s	6.3	45.2			55.5	26.0
Max Q Clear Time (g_c+I1), s	3.2	16.4			15.2	12.4
Green Ext Time (p_c), s	0.0	17.4			19.9	0.9

Intersection Summary

HCM 6th Ctrl Delay			12.1			
HCM 6th LOS			B			

HCM 6th TWSC
 15: Fort Stevens Highway Spur & SE Ensign Lane

08/11/2023

Intersection						
Int Delay, s/veh	6.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗		↑
Traffic Vol, veh/h	264	24	25	239	74	96
Future Vol, veh/h	264	24	25	239	74	96
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	175	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	1
Mvmt Flow	300	27	28	272	84	109

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	305	28	0	0	300
Stage 1	28	-	-	-	-
Stage 2	277	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	691	1053	-	-	1273
Stage 1	1000	-	-	-	-
Stage 2	774	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	643	1053	-	-	1273
Mov Cap-2 Maneuver	643	-	-	-	-
Stage 1	1000	-	-	-	-
Stage 2	720	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.8	0	3.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	643	1053	1273
HCM Lane V/C Ratio	-	-	0.467	0.026	0.066
HCM Control Delay (s)	-	-	15.4	8.5	8
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	2.5	0.1	0.2

HCM Signalized Intersection Capacity Analysis
 16: OR 101 & SE Ensign Lane

08/11/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	199	229	129	105	234	77	54	322	219	171	385	61	
Future Volume (vph)	199	229	129	105	234	77	54	322	219	171	385	61	
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	
Total Lost time (s)	4.0	4.5		4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.5		
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95		
Frpb, ped/bikes	1.00	0.99		1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00		
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1662	1644		3225	1750	1488	1662	3292	1450	1646	3247		
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1662	1644		3225	1750	1488	1662	3292	1450	1646	3247		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	209	241	136	111	246	81	57	339	231	180	405	64	
RTOR Reduction (vph)	0	17	0	0	0	49	0	0	160	0	11	0	
Lane Group Flow (vph)	209	360	0	111	246	32	57	339	71	180	458	0	
Confl. Peds. (#/hr)			8	8					1	1		1	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		
Protected Phases	3	8		7	4	5	1	6	7	5	2		
Permitted Phases						4			6				
Actuated Green, G (s)	16.1	29.9		7.3	21.1	35.7	6.5	20.2	27.5	14.6	28.3		
Effective Green, g (s)	16.1	29.9		7.3	21.1	35.7	6.5	20.2	27.5	14.6	28.3		
Actuated g/C Ratio	0.18	0.34		0.08	0.24	0.40	0.07	0.23	0.31	0.16	0.32		
Clearance Time (s)	4.0	4.5		4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.5		
Vehicle Extension (s)	2.5	6.2		2.5	6.2	2.5	2.5	6.2	2.5	2.5	6.2		
Lane Grp Cap (vph)	300	552		264	414	596	121	747	448	270	1032		
v/s Ratio Prot	c0.13	c0.22		0.03	0.14	0.01	0.03	0.10	0.01	c0.11	c0.14		
v/s Ratio Perm						0.01			0.04				
v/c Ratio	0.70	0.65		0.42	0.59	0.05	0.47	0.45	0.16	0.67	0.44		
Uniform Delay, d1	34.2	25.1		38.8	30.1	16.3	39.6	29.6	22.3	34.9	24.1		
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	6.3	4.5		0.8	4.3	0.0	2.1	1.3	0.1	5.5	0.9		
Delay (s)	40.5	29.7		39.6	34.5	16.3	41.7	30.9	22.5	40.4	25.0		
Level of Service	D	C		D	C	B	D	C	C	D	C		
Approach Delay (s)		33.5			32.4			28.8			29.3		
Approach LOS		C			C			C			C		
Intersection Summary													
HCM 2000 Control Delay			30.8									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.64										
Actuated Cycle Length (s)			89.0									Sum of lost time (s)	17.0
Intersection Capacity Utilization			61.8%									ICU Level of Service	B
Analysis Period (min)			15										

c Critical Lane Group

HCM 6th Signalized Intersection Summary
 16: OR 101 & SE Ensign Lane

08/11/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	229	129	105	234	77	54	322	219	171	385	61
Future Volume (veh/h)	199	229	129	105	234	77	54	322	219	171	385	61
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1750	1750	1750	1750	1736	1736	1736	1750	1750
Adj Flow Rate, veh/h	209	241	120	111	246	39	57	339	115	180	405	53
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	1	1	0	0
Cap, veh/h	260	355	177	202	402	538	79	791	444	224	969	126
Arrive On Green	0.16	0.32	0.32	0.06	0.23	0.23	0.05	0.24	0.24	0.14	0.33	0.33
Sat Flow, veh/h	1667	1099	547	3233	1750	1468	1667	3299	1468	1654	2958	385
Grp Volume(v), veh/h	209	0	361	111	246	39	57	339	115	180	227	231
Grp Sat Flow(s),veh/h/ln	1667	0	1647	1617	1750	1468	1667	1650	1468	1654	1663	1680
Q Serve(g_s), s	8.6	0.0	13.5	2.4	8.9	1.2	2.4	6.2	4.2	7.5	7.5	7.6
Cycle Q Clear(g_c), s	8.6	0.0	13.5	2.4	8.9	1.2	2.4	6.2	4.2	7.5	7.5	7.6
Prop In Lane	1.00		0.33	1.00		1.00	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	260	0	531	202	402	538	79	791	444	224	545	551
V/C Ratio(X)	0.81	0.00	0.68	0.55	0.61	0.07	0.72	0.43	0.26	0.80	0.42	0.42
Avail Cap(c_a), veh/h	540	0	998	410	715	800	235	1441	733	466	960	970
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.9	0.0	20.9	32.3	24.5	14.7	33.3	22.9	18.7	29.8	18.6	18.6
Incr Delay (d2), s/veh	4.4	0.0	6.1	1.7	6.0	0.2	8.7	1.5	1.2	5.0	2.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.0	5.8	0.9	4.1	0.4	1.1	2.3	1.5	3.0	2.9	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.3	0.0	26.9	34.0	30.6	14.9	42.1	24.4	20.0	34.8	20.6	20.7
LnGrp LOS	C	A	C	C	C	B	D	C	B	C	C	C
Approach Vol, veh/h		570			396			511			638	
Approach Delay, s/veh		29.3			30.0			25.3			24.6	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.4	27.8	15.1	20.8	13.6	21.5	8.4	27.4				
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5				
Max Green Setting (Gmax), s	10.0	41.0	23.0	29.0	20.0	31.0	9.0	43.0				
Max Q Clear Time (g_c+I1), s	4.4	9.6	10.6	10.9	9.5	8.2	4.4	15.5				
Green Ext Time (p_c), s	0.0	10.5	0.6	3.1	0.4	8.6	0.1	5.6				

Intersection Summary

HCM 6th Ctrl Delay	27.1
HCM 6th LOS	C

Notes

User approved changes to right turn type.

HCM 6th AWSC
 1: NW Ridge Road/Lake Drive & Pacific Drive

08/11/2023

Intersection	
Intersection Delay, s/veh	7.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	22	16	37	3	8	7	8	51	10	10	1
Future Vol, veh/h	1	22	16	37	3	8	7	8	51	10	10	1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	0	5	0	3	0	0	0	0	4	0	0	0
Mvmt Flow	1	26	19	44	4	9	8	9	60	12	12	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.1	7.6	7	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	3%	77%	48%
Vol Thru, %	12%	56%	6%	48%
Vol Right, %	77%	41%	17%	5%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	66	39	48	21
LT Vol	7	1	37	10
Through Vol	8	22	3	10
RT Vol	51	16	8	1
Lane Flow Rate	78	46	56	25
Geometry Grp	1	1	1	1
Degree of Util (X)	0.079	0.049	0.066	0.029
Departure Headway (Hd)	3.653	3.879	4.218	4.204
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	973	918	846	845
Service Time	1.705	1.927	2.259	2.26
HCM Lane V/C Ratio	0.08	0.05	0.066	0.03
HCM Control Delay	7	7.1	7.6	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.2	0.2	0.1

HCM 6th TWSC
2: NW Ridge Road & Peter Iredale Road

08/11/2023

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	8	2	11	15	2	6	16	34	4	2	71	5
Future Vol, veh/h	8	2	11	15	2	6	16	34	4	2	71	5
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	2	2	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	9	0	0	0	0	3	0	0	0	0
Mvmt Flow	9	2	12	17	2	7	18	38	4	2	79	6

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	170	168	84	171	169	43	87	0	0	44	0	0
Stage 1	88	88	-	78	78	-	-	-	-	-	-	-
Stage 2	82	80	-	93	91	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.29	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.381	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	798	728	956	797	728	1033	1522	-	-	1577	-	-
Stage 1	925	826	-	936	834	-	-	-	-	-	-	-
Stage 2	931	832	-	919	823	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	781	716	954	775	716	1030	1519	-	-	1574	-	-
Mov Cap-2 Maneuver	781	716	-	775	716	-	-	-	-	-	-	-
Stage 1	912	824	-	923	822	-	-	-	-	-	-	-
Stage 2	911	820	-	904	821	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	9.5	2.2	0.2
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1519	-	-	767	954	822	1574	-	-
HCM Lane V/C Ratio	0.012	-	-	0.014	0.013	0.031	0.001	-	-
HCM Control Delay (s)	7.4	0	-	9.8	8.8	9.5	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.1	0	-	-

HCM 6th TWSC
3: NW Ridge Road & North Site Access

08/11/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	54	0	0	97
Future Vol, veh/h	0	0	54	0	0	97
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	0	0	1
Mvmt Flow	0	0	60	0	0	108

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	168	60	0	0	60
Stage 1	60	-	-	-	-
Stage 2	108	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	827	1011	-	-	1556
Stage 1	968	-	-	-	-
Stage 2	921	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	827	1011	-	-	1556
Mov Cap-2 Maneuver	827	-	-	-	-
Stage 1	968	-	-	-	-
Stage 2	921	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1556	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 6th TWSC
4: NW Ridge Road & Main Site Access

08/11/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	54	0	0	97
Future Vol, veh/h	0	0	54	0	0	97
Conflicting Peds, #/hr	0	1	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	0	0	1
Mvmt Flow	0	0	60	0	0	108

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	168	61	0	0	60
Stage 1	60	-	-	-	-
Stage 2	108	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	827	1010	-	-	1556
Stage 1	968	-	-	-	-
Stage 2	921	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	827	1009	-	-	1556
Mov Cap-2 Maneuver	827	-	-	-	-
Stage 1	968	-	-	-	-
Stage 2	921	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1556	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 6th TWSC
5: NW Ridge Road & South Site Access

08/11/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	54	0	0	97
Future Vol, veh/h	0	0	54	0	0	97
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	0	0	1
Mvmt Flow	0	0	60	0	0	108

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	168	62	0	0	60	0
Stage 1	60	-	-	-	-	-
Stage 2	108	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	827	1009	-	-	1556	-
Stage 1	968	-	-	-	-	-
Stage 2	921	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	827	1007	-	-	1556	-
Mov Cap-2 Maneuver	827	-	-	-	-	-
Stage 1	968	-	-	-	-	-
Stage 2	921	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1556	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 6th TWSC
6: NW Ridge Road & SW 9th Street

08/11/2023

Intersection						
Int Delay, s/veh	3.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	99	170	10	117	144
Future Vol, veh/h	4	99	170	10	117	144
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	5	132	227	13	156	192

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	738	234	0	0	240
Stage 1	234	-	-	-	-
Stage 2	504	-	-	-	-
Critical Hdwy	6.4	6.21	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.309	-	-	2.2
Pot Cap-1 Maneuver	388	808	-	-	1339
Stage 1	810	-	-	-	-
Stage 2	611	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	338	808	-	-	1339
Mov Cap-2 Maneuver	338	-	-	-	-
Stage 1	810	-	-	-	-
Stage 2	532	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	3.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	767	1339
HCM Lane V/C Ratio	-	-	0.179	0.117
HCM Control Delay (s)	-	-	10.7	8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.6	0.4

HCM 6th TWSC
7: 18th Street/NW Ridge Road & Delaura Beach Lane

08/11/2023

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	25	5	36	61	1
Future Vol, veh/h	3	25	5	36	61	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	0	0	0	3	0	0
Mvmt Flow	4	32	6	46	78	1

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	137	79	79	0	0
Stage 1	79	-	-	-	-
Stage 2	58	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	861	987	1532	-	-
Stage 1	949	-	-	-	-
Stage 2	970	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	858	987	1532	-	-
Mov Cap-2 Maneuver	858	-	-	-	-
Stage 1	945	-	-	-	-
Stage 2	970	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	0.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1532	-	971	-	-
HCM Lane V/C Ratio	0.004	-	0.037	-	-
HCM Control Delay (s)	7.4	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

HCM 6th TWSC
8: NW Ridge Road & Delaura Beach Lane

08/11/2023

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↻			↻			↻			↻	
Traffic Vol, veh/h	0	2	1	6	0	0	0	0	26	0	61	1
Future Vol, veh/h	0	2	1	6	0	0	0	0	26	0	61	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	66	66	66	66	66	66	66	66	66	66	66	66
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	2	0
Mvmt Flow	0	3	2	9	0	0	0	0	39	0	92	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	132	93	116	114	-	94	0	0	39	0	0
Stage 1	-	93	-	20	20	-	-	-	-	-	-	-
Stage 2	-	39	-	96	94	-	-	-	-	-	-	-
Critical Hdwy	-	6.5	6.2	7.1	6.5	-	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	-	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	-	4	3.3	3.5	4	-	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	0	762	970	865	780	0	1513	-	-	1584	-	-
Stage 1	0	822	-	1004	883	0	-	-	-	-	-	-
Stage 2	0	866	-	916	821	0	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	762	970	861	780	-	1513	-	-	1584	-	-
Mov Cap-2 Maneuver	-	762	-	861	780	-	-	-	-	-	-	-
Stage 1	-	822	-	1004	883	-	-	-	-	-	-	-
Stage 2	-	866	-	911	821	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.4		9.2		0		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1513	-	-	821	861	1584	-	-
HCM Lane V/C Ratio	-	-	-	0.006	0.011	-	-	-
HCM Control Delay (s)	0	-	-	9.4	9.2	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

HCM 6th AWSC

9: E Main Avenue (OR 104)/NE Skipanon Drive & Fort Stevens Highway/E Harbor Drive 08/11/2023

Intersection	
Intersection Delay, s/veh	12.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↶	↷		↶	↷
Traffic Vol, veh/h	4	206	73	82	79	21	40	22	147	38	23	0
Future Vol, veh/h	4	206	73	82	79	21	40	22	147	38	23	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	25	4	1	1	8	29	5	32	1	50	22	0
Mvmt Flow	5	245	87	98	94	25	48	26	175	45	27	0
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	14.7	10.4	11.1	11.9
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	65%	0%	100%	0%	100%	0%	62%	0%
Vol Thru, %	35%	0%	0%	74%	0%	79%	38%	100%
Vol Right, %	0%	100%	0%	26%	0%	21%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	62	147	4	279	82	100	61	0
LT Vol	40	0	4	0	82	0	38	0
Through Vol	22	0	0	206	0	79	23	0
RT Vol	0	147	0	73	0	21	0	0
Lane Flow Rate	74	175	5	332	98	119	73	0
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.136	0.295	0.009	0.53	0.177	0.199	0.156	0
Departure Headway (Hd)	6.646	6.075	6.8	5.747	6.541	6.006	7.715	6.913
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	540	592	526	628	549	596	465	0
Service Time	4.388	3.818	4.539	3.485	4.285	3.749	5.467	4.665
HCM Lane V/C Ratio	0.137	0.296	0.01	0.529	0.179	0.2	0.157	0
HCM Control Delay	10.4	11.4	9.6	14.8	10.7	10.2	11.9	9.7
HCM Lane LOS	B	B	A	B	B	B	B	N
HCM 95th-tile Q	0.5	1.2	0	3.1	0.6	0.7	0.5	0

Intersection

Intersection Delay, s/veh 7.7

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	17	81	2	0	43	18	0	1	3	23	0	10
Future Vol, veh/h	17	81	2	0	43	18	0	1	3	23	0	10
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	6	0	0	0	0	0	0	0	0	9	0	0
Mvmt Flow	22	107	3	0	57	24	0	1	4	30	0	13
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8	7.3	7	7.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	17%	0%	70%
Vol Thru, %	25%	81%	70%	0%
Vol Right, %	75%	2%	30%	30%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	4	100	61	33
LT Vol	0	17	0	23
Through Vol	1	81	43	0
RT Vol	3	2	18	10
Lane Flow Rate	5	132	80	43
Geometry Grp	1	1	1	1
Degree of Util (X)	0.006	0.152	0.087	0.053
Departure Headway (Hd)	3.958	4.171	3.908	4.378
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	910	857	909	805
Service Time	1.958	2.214	1.968	2.476
HCM Lane V/C Ratio	0.005	0.154	0.088	0.053
HCM Control Delay	7	8	7.3	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.5	0.3	0.2

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	68	3	60	0	3	2	102	279	2	6	218	98
Future Vol, veh/h	68	3	60	0	3	2	102	279	2	6	218	98
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	0	0	0	0	0	0	0	1	0	0	0	2
Mvmt Flow	79	3	70	0	3	2	119	324	2	7	253	114

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	891	889	311	924	945	325	368	0	0	326	0	0
Stage 1	325	325	-	563	563	-	-	-	-	-	-	-
Stage 2	566	564	-	361	382	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	265	285	734	252	264	721	1202	-	-	1245	-	-
Stage 1	692	653	-	514	512	-	-	-	-	-	-	-
Stage 2	513	512	-	662	616	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	236	249	733	204	230	721	1201	-	-	1245	-	-
Mov Cap-2 Maneuver	236	249	-	204	230	-	-	-	-	-	-	-
Stage 1	608	648	-	452	450	-	-	-	-	-	-	-
Stage 2	446	450	-	592	611	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	23.6		16.6		2.2			0.1		
HCM LOS	C		C							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1201	-	-	343	316	1245	-
HCM Lane V/C Ratio	0.099	-	-	0.444	0.018	0.006	-
HCM Control Delay (s)	8.3	0	-	23.6	16.6	7.9	0
HCM Lane LOS	A	A	-	C	C	A	A
HCM 95th %tile Q(veh)	0.3	-	-	2.2	0.1	0	-

HCM 6th TWSC
 12: E Main Avenue (OR 104) & Fort Stevens Highway Spur

08/11/2023

Intersection						
Int Delay, s/veh	5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	91	69	76	143	110
Future Vol, veh/h	40	91	69	76	143	110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	125	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	3	1	12	0	1	5
Mvmt Flow	49	112	85	94	177	136

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	622	132	0	0	179
Stage 1	132	-	-	-	-
Stage 2	490	-	-	-	-
Critical Hdwy	6.43	6.21	-	-	4.11
Critical Hdwy Stg 1	5.43	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-
Follow-up Hdwy	3.527	3.309	-	-	2.209
Pot Cap-1 Maneuver	449	920	-	-	1403
Stage 1	892	-	-	-	-
Stage 2	614	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	392	920	-	-	1403
Mov Cap-2 Maneuver	460	-	-	-	-
Stage 1	892	-	-	-	-
Stage 2	537	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	4.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	705	1403
HCM Lane V/C Ratio	-	-	0.229	0.126
HCM Control Delay (s)	-	-	11.6	7.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.9	0.4

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	70	17	15	68	109	26
Future Vol, veh/h	70	17	15	68	109	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	0	0	0	9	3	0
Mvmt Flow	91	22	19	88	142	34

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	285	159	176	0	-	0
Stage 1	159	-	-	-	-	-
Stage 2	126	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	710	892	1412	-	-	-
Stage 1	875	-	-	-	-	-
Stage 2	905	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	700	892	1412	-	-	-
Mov Cap-2 Maneuver	722	-	-	-	-	-
Stage 1	863	-	-	-	-	-
Stage 2	905	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.4	1.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1412	-	722	892	-	-
HCM Lane V/C Ratio	0.014	-	0.126	0.025	-	-
HCM Control Delay (s)	7.6	0	10.7	9.1	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.4	0.1	-	-

HCM Signalized Intersection Capacity Analysis

14: US 101 & E Harbor Drive

08/11/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	211	9	14	380	378	176
Future Volume (vph)	211	9	14	380	378	176
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.5	4.5	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1525	1488	1662	1699	1716	1403
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1525	1488	1662	1699	1716	1403
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	237	10	16	427	425	198
RTOR Reduction (vph)	0	7	0	0	0	57
Lane Group Flow (vph)	237	3	16	427	425	141
Heavy Vehicles (%)	9%	0%	0%	3%	2%	6%
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	8		1	6	2	8
Permitted Phases		8				2
Actuated Green, G (s)	12.9	12.9	0.7	24.1	19.4	32.3
Effective Green, g (s)	12.9	12.9	0.7	24.1	19.4	32.3
Actuated g/C Ratio	0.28	0.28	0.02	0.53	0.43	0.71
Clearance Time (s)	4.0	4.0	4.0	4.5	4.5	4.0
Vehicle Extension (s)	2.5	2.5	2.5	6.2	6.2	2.5
Lane Grp Cap (vph)	432	421	25	899	731	995
v/s Ratio Prot	c0.16		0.01	c0.25	c0.25	0.04
v/s Ratio Perm		0.00				0.06
v/c Ratio	0.55	0.01	0.64	0.47	0.58	0.14
Uniform Delay, d1	13.8	11.7	22.3	6.7	10.0	2.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	0.0	40.2	1.2	2.3	0.0
Delay (s)	15.0	11.7	62.5	7.9	12.3	2.2
Level of Service	B	B	E	A	B	A
Approach Delay (s)	14.8			9.9	9.1	
Approach LOS	B			A	A	

Intersection Summary

HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	45.5	Sum of lost time (s)	12.5
Intersection Capacity Utilization	41.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Signalized Intersection Summary
 14: US 101 & E Harbor Drive

08/11/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	211	9	14	380	378	176
Future Volume (veh/h)	211	9	14	380	378	176
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1627	1750	1750	1709	1723	1668
Adj Flow Rate, veh/h	237	4	16	427	425	136
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	9	0	0	3	2	6
Cap, veh/h	306	293	34	1039	854	980
Arrive On Green	0.20	0.20	0.02	0.61	0.50	0.50
Sat Flow, veh/h	1550	1483	1667	1709	1723	1414
Grp Volume(v), veh/h	237	4	16	427	425	136
Grp Sat Flow(s),veh/h/ln	1550	1483	1667	1709	1723	1414
Q Serve(g_s), s	6.3	0.1	0.4	5.7	7.2	1.4
Cycle Q Clear(g_c), s	6.3	0.1	0.4	5.7	7.2	1.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	306	293	34	1039	854	980
V/C Ratio(X)	0.77	0.01	0.48	0.41	0.50	0.14
Avail Cap(c_a), veh/h	994	951	229	2094	1716	1688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	16.6	14.1	21.2	4.5	7.4	2.3
Incr Delay (d2), s/veh	3.1	0.0	7.5	1.1	1.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.2	1.0	1.9	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.7	14.1	28.7	5.5	9.2	2.5
LnGrp LOS	B	B	C	A	A	A
Approach Vol, veh/h	241			443	561	
Approach Delay, s/veh	19.6			6.4	7.6	
Approach LOS	B			A	A	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	4.9	26.2			31.0	12.6
Change Period (Y+Rc), s	4.0	4.5			4.5	4.0
Max Green Setting (Gmax), s	6.0	43.5			53.5	28.0
Max Q Clear Time (g_c+I1), s	2.4	9.2			7.7	8.3
Green Ext Time (p_c), s	0.0	12.4			12.1	0.8
Intersection Summary						
HCM 6th Ctrl Delay			9.5			
HCM 6th LOS			A			

Intersection						
Int Delay, s/veh	3.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗		↑
Traffic Vol, veh/h	97	13	17	192	41	48
Future Vol, veh/h	97	13	17	192	41	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	175	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	1	0	4
Mvmt Flow	111	15	20	221	47	55

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	169	20	0	0	241
Stage 1	20	-	-	-	-
Stage 2	149	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	826	1064	-	-	1337
Stage 1	1008	-	-	-	-
Stage 2	884	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	796	1064	-	-	1337
Mov Cap-2 Maneuver	796	-	-	-	-
Stage 1	1008	-	-	-	-
Stage 2	852	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	3.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	796	1064	1337
HCM Lane V/C Ratio	-	-	0.14	0.014	0.035
HCM Control Delay (s)	-	-	10.3	8.4	7.8
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0	0.1

HCM Signalized Intersection Capacity Analysis

16: OR 101 & SE Ensign Lane

08/11/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↖	↗		↖↗	↖	↗	↖	↖↗	↗	↖	↖↗		
Traffic Volume (vph)	108	99	58	58	112	194	45	264	100	71	215	33	
Future Volume (vph)	108	99	58	58	112	194	45	264	100	71	215	33	
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	
Total Lost time (s)	4.0	4.5		4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.5		
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95		
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1630	1609		3225	1733	1473	1630	3260	1458	1646	3104		
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1630	1609		3225	1733	1473	1630	3260	1458	1646	3104		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Adj. Flow (vph)	115	105	62	62	119	206	48	281	106	76	229	35	
RTOR Reduction (vph)	0	19	0	0	0	132	0	0	71	0	10	0	
Lane Group Flow (vph)	115	148	0	62	119	74	48	281	35	76	254	0	
Confl. Bikes (#/hr)			1										
Heavy Vehicles (%)	2%	0%	6%	0%	1%	1%	2%	2%	2%	1%	5%	5%	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		
Protected Phases	3	8		7	4	5	1	6	7	5	2		
Permitted Phases						4			6				
Actuated Green, G (s)	8.3	19.5		4.6	15.8	24.5	4.4	18.1	22.7	8.7	22.4		
Effective Green, g (s)	8.3	19.5		4.6	15.8	24.5	4.4	18.1	22.7	8.7	22.4		
Actuated g/C Ratio	0.12	0.29		0.07	0.23	0.36	0.06	0.27	0.33	0.13	0.33		
Clearance Time (s)	4.0	4.5		4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.5		
Vehicle Extension (s)	2.5	6.2		2.5	6.2	2.5	2.5	6.2	2.5	2.5	6.2		
Lane Grp Cap (vph)	199	462		218	403	531	105	869	487	210	1024		
v/s Ratio Prot	c0.07	c0.09		0.02	0.07	0.02	0.03	c0.09	0.00	c0.05	0.08		
v/s Ratio Perm						0.03			0.02				
v/c Ratio	0.58	0.32		0.28	0.30	0.14	0.46	0.32	0.07	0.36	0.25		
Uniform Delay, d1	28.1	19.0		30.1	21.5	14.6	30.6	20.0	15.4	27.1	16.6		
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	3.3	1.2		0.5	1.2	0.1	2.3	0.6	0.0	0.8	0.4		
Delay (s)	31.5	20.2		30.6	22.7	14.7	32.9	20.6	15.5	27.8	17.0		
Level of Service	C	C		C	C	B	C	C	B	C	B		
Approach Delay (s)		24.8			19.7			20.7			19.4		
Approach LOS		C			B			C			B		
Intersection Summary													
HCM 2000 Control Delay			20.9	HCM 2000 Level of Service						C			
HCM 2000 Volume to Capacity ratio			0.37										
Actuated Cycle Length (s)			67.9	Sum of lost time (s)						17.0			
Intersection Capacity Utilization			41.6%	ICU Level of Service						A			
Analysis Period (min)			15										
c Critical Lane Group													

HCM 6th Signalized Intersection Summary
 16: OR 101 & SE Ensign Lane

08/11/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↘		↗↘	↑	↗	↗	↑↑	↗	↗	↗↘	
Traffic Volume (veh/h)	108	99	58	58	112	194	45	264	100	71	215	33
Future Volume (veh/h)	108	99	58	58	112	194	45	264	100	71	215	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1750	1668	1750	1736	1736	1723	1723	1723	1736	1682	1682
Adj Flow Rate, veh/h	115	105	41	62	119	105	48	281	53	76	229	24
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	0	6	0	1	1	2	2	2	1	5	5
Cap, veh/h	150	292	114	191	368	410	81	876	477	111	833	86
Arrive On Green	0.09	0.24	0.24	0.06	0.21	0.21	0.05	0.27	0.27	0.07	0.29	0.29
Sat Flow, veh/h	1641	1193	466	3233	1736	1471	1641	3273	1460	1654	2922	303
Grp Volume(v), veh/h	115	0	146	62	119	105	48	281	53	76	124	129
Grp Sat Flow(s),veh/h/ln	1641	0	1659	1617	1736	1471	1641	1637	1460	1654	1598	1627
Q Serve(g_s), s	3.2	0.0	3.4	0.9	2.7	2.6	1.3	3.2	1.2	2.1	2.8	2.9
Cycle Q Clear(g_c), s	3.2	0.0	3.4	0.9	2.7	2.6	1.3	3.2	1.2	2.1	2.8	2.9
Prop In Lane	1.00		0.28	1.00		1.00	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	150	0	406	191	368	410	81	876	477	111	456	464
V/C Ratio(X)	0.76	0.00	0.36	0.32	0.32	0.26	0.59	0.32	0.11	0.69	0.27	0.28
Avail Cap(c_a), veh/h	698	0	1465	757	1201	1116	384	2472	1189	528	1343	1367
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.9	0.0	14.7	21.2	15.7	13.2	21.9	13.8	11.1	21.4	13.0	13.0
Incr Delay (d2), s/veh	5.9	0.0	2.2	0.7	2.0	1.3	5.0	0.9	0.4	5.5	1.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	0.0	1.4	0.3	1.1	0.9	0.5	1.0	0.4	0.9	0.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.8	0.0	16.9	21.9	17.7	14.5	26.9	14.6	11.5	26.9	14.3	14.3
LnGrp LOS	C	A	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		261			286			382			329	
Approach Delay, s/veh		21.2			17.4			15.7			17.2	
Approach LOS		C			B			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.3	17.9	8.3	14.5	7.1	17.1	6.8	16.0				
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5				
Max Green Setting (Gmax), s	11.0	39.5	20.0	32.5	15.0	35.5	11.0	41.5				
Max Q Clear Time (g_c+I1), s	3.3	4.9	5.2	4.7	4.1	5.2	2.9	5.4				
Green Ext Time (p_c), s	0.0	5.7	0.3	2.7	0.1	7.4	0.1	2.1				

Intersection Summary

HCM 6th Ctrl Delay	17.7
HCM 6th LOS	B

Notes

User approved changes to right turn type.

HCM 6th AWSC
1: NW Ridge Road/Lake Drive & Pacific Drive

08/11/2023

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	29	41	100	48	10	19	27	98	11	15	5
Future Vol, veh/h	2	29	41	100	48	10	19	27	98	11	15	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	1	0	0	0
Mvmt Flow	2	32	45	109	52	11	21	29	107	12	16	5
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.6	8.7	8	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	3%	63%	35%
Vol Thru, %	19%	40%	30%	48%
Vol Right, %	68%	57%	6%	16%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	144	72	158	31
LT Vol	19	2	100	11
Through Vol	27	29	48	15
RT Vol	98	41	10	5
Lane Flow Rate	157	78	172	34
Geometry Grp	1	1	1	1
Degree of Util (X)	0.179	0.091	0.214	0.043
Departure Headway (Hd)	4.127	4.173	4.488	4.613
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	872	860	802	777
Service Time	2.143	2.192	2.504	2.635
HCM Lane V/C Ratio	0.18	0.091	0.214	0.044
HCM Control Delay	8	7.6	8.7	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.3	0.8	0.1

HCM 6th TWSC
2: NW Ridge Road & Peter Iredale Road

08/11/2023

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕			↕	
Traffic Vol, veh/h	44	6	61	19	14	14	92	123	44	14	102	64
Future Vol, veh/h	44	6	61	19	14	14	92	123	44	14	102	64
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	0	0
Mvmt Flow	48	7	66	21	15	15	100	134	48	15	111	70

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	551	560	147	572	571	160	182	0	0	183	0	0
Stage 1	177	177	-	359	359	-	-	-	-	-	-	-
Stage 2	374	383	-	213	212	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	448	440	905	434	434	890	1405	-	-	1404	-	-
Stage 1	829	756	-	663	631	-	-	-	-	-	-	-
Stage 2	651	616	-	794	731	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	397	399	904	369	394	888	1404	-	-	1403	-	-
Mov Cap-2 Maneuver	397	399	-	369	394	-	-	-	-	-	-	-
Stage 1	762	746	-	609	580	-	-	-	-	-	-	-
Stage 2	573	566	-	721	721	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.1		13.9		2.8		0.6	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1404	-	-	397	904	457	1403	-	-
HCM Lane V/C Ratio	0.071	-	-	0.137	0.073	0.112	0.011	-	-
HCM Control Delay (s)	7.8	0	-	15.5	9.3	13.9	7.6	0	-
HCM Lane LOS	A	A	-	C	A	B	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.5	0.2	0.4	0	-	-

HCM 6th TWSC
3: NW Ridge Road & North Site Access

08/11/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	TT		TT			TT
Traffic Vol, veh/h	0	0	259	0	0	182
Future Vol, veh/h	0	0	259	0	0	182
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	282	0	0	198

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	480	282	0	0	282	0
Stage 1	282	-	-	-	-	-
Stage 2	198	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	548	762	-	-	1292	-
Stage 1	770	-	-	-	-	-
Stage 2	840	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	548	762	-	-	1292	-
Mov Cap-2 Maneuver	548	-	-	-	-	-
Stage 1	770	-	-	-	-	-
Stage 2	840	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	1292
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 6th TWSC
4: NW Ridge Road & Main Site Access

08/11/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	TT		TT			TT
Traffic Vol, veh/h	0	0	259	0	0	182
Future Vol, veh/h	0	0	259	0	0	182
Conflicting Peds, #/hr	0	1	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	282	0	0	198

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	480	283	0	0	282	0
Stage 1	282	-	-	-	-	-
Stage 2	198	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	548	761	-	-	1292	-
Stage 1	770	-	-	-	-	-
Stage 2	840	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	548	760	-	-	1292	-
Mov Cap-2 Maneuver	548	-	-	-	-	-
Stage 1	770	-	-	-	-	-
Stage 2	840	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1292	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

HCM 6th TWSC
5: NW Ridge Road & South Site Access

08/11/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	259	0	0	182
Future Vol, veh/h	0	0	259	0	0	182
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	282	0	0	198

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	480	284	0	0	282
Stage 1	282	-	-	-	-
Stage 2	198	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	548	760	-	-	1292
Stage 1	770	-	-	-	-
Stage 2	840	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	548	759	-	-	1292
Mov Cap-2 Maneuver	548	-	-	-	-
Stage 1	770	-	-	-	-
Stage 2	840	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1292	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 6th TWSC
6: NW Ridge Road & SW 9th Street

08/11/2023

Intersection						
Int Delay, s/veh	3.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	72	72	6	82	138
Future Vol, veh/h	11	72	72	6	82	138
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	0	4	2	0	0	0
Mvmt Flow	14	91	91	8	104	175

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	478	95	0	0	99
Stage 1	95	-	-	-	-
Stage 2	383	-	-	-	-
Critical Hdwy	6.4	6.24	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.336	-	-	2.2
Pot Cap-1 Maneuver	550	956	-	-	1507
Stage 1	934	-	-	-	-
Stage 2	694	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	508	956	-	-	1507
Mov Cap-2 Maneuver	508	-	-	-	-
Stage 1	934	-	-	-	-
Stage 2	641	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	2.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	856	1507
HCM Lane V/C Ratio	-	-	0.123	0.069
HCM Control Delay (s)	-	-	9.8	7.6
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.2

HCM 6th TWSC
 7: 18th Street/NW Ridge Road & Delaura Beach Lane

08/11/2023

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	80	19	153	119	6
Future Vol, veh/h	3	80	19	153	119	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	0	2	0	0	0	0
Mvmt Flow	4	96	23	184	143	7

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	377	147	150	0	-	0
Stage 1	147	-	-	-	-	-
Stage 2	230	-	-	-	-	-
Critical Hdwy	6.4	6.22	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	2.2	-	-	-
Pot Cap-1 Maneuver	629	900	1444	-	-	-
Stage 1	885	-	-	-	-	-
Stage 2	813	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	618	900	1444	-	-	-
Mov Cap-2 Maneuver	618	-	-	-	-	-
Stage 1	869	-	-	-	-	-
Stage 2	813	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1444	-	885	-	-
HCM Lane V/C Ratio	0.016	-	0.113	-	-
HCM Control Delay (s)	7.5	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

HCM 6th TWSC
8: NW Ridge Road & Delaura Beach Lane

08/11/2023

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↶			↷			↶↷			↶↷	
Traffic Vol, veh/h	0	3	5	27	0	0	3	0	73	0	76	6
Future Vol, veh/h	0	3	5	27	0	0	3	0	73	0	76	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0	0	0	2	0	0	0
Mvmt Flow	0	4	7	36	0	0	4	0	96	0	100	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	208	104	166	164	-	108	0	0	96	0	0
Stage 1	-	104	-	56	56	-	-	-	-	-	-	-
Stage 2	-	104	-	110	108	-	-	-	-	-	-	-
Critical Hdwy	-	6.5	6.2	7.1	6.5	-	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	-	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	-	4	3.3	3.5	4	-	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	0	692	956	803	732	0	1495	-	-	1510	-	-
Stage 1	0	813	-	961	852	0	-	-	-	-	-	-
Stage 2	0	813	-	900	810	0	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	-	690	956	793	730	-	1495	-	-	1510	-	-
Mov Cap-2 Maneuver	-	690	-	793	730	-	-	-	-	-	-	-
Stage 1	-	813	-	958	849	-	-	-	-	-	-	-
Stage 2	-	811	-	889	810	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB			
HCM Control Delay, s	9.4		9.8		0.3		0			
HCM LOS	A		A							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1495	-	-	835	793	1510	-	-
HCM Lane V/C Ratio	0.003	-	-	0.013	0.045	-	-	-
HCM Control Delay (s)	7.4	0	-	9.4	9.8	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

HCM 6th AWSC

9: E Main Avenue (OR 104)/NE Skipanon Drive & Fort Stevens Highway/E Harbor Drive 08/11/2023

Intersection	
Intersection Delay, s/veh	20.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱			↰	↱		↰	↱
Traffic Vol, veh/h	1	202	103	259	289	40	108	30	183	72	42	2
Future Vol, veh/h	1	202	103	259	289	40	108	30	183	72	42	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	2	1	5	0	4	1	0	0	0
Mvmt Flow	1	224	114	288	321	44	120	33	203	80	47	2
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	24	23	14.9	15.1
HCM LOS	C	C	B	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	78%	0%	100%	0%	100%	0%	63%	0%
Vol Thru, %	22%	0%	0%	66%	0%	88%	37%	0%
Vol Right, %	0%	100%	0%	34%	0%	12%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	138	183	1	305	259	329	114	2
LT Vol	108	0	1	0	259	0	72	0
Through Vol	30	0	0	202	0	289	42	0
RT Vol	0	183	0	103	0	40	0	2
Lane Flow Rate	153	203	1	339	288	366	127	2
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.348	0.402	0.002	0.679	0.603	0.703	0.304	0.005
Departure Headway (Hd)	8.165	7.111	7.973	7.217	7.539	6.923	8.633	7.581
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	440	506	448	498	478	523	415	471
Service Time	5.919	4.865	5.733	4.977	5.295	4.679	6.399	5.347
HCM Lane V/C Ratio	0.348	0.401	0.002	0.681	0.603	0.7	0.306	0.004
HCM Control Delay	15.2	14.6	10.7	24	21.2	24.5	15.2	10.4
HCM Lane LOS	C	B	B	C	C	C	C	B
HCM 95th-tile Q	1.5	1.9	0	5.1	3.9	5.5	1.3	0

Intersection

Intersection Delay, s/veh 9.2

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	138	5	11	167	49	1	4	5	25	1	14
Future Vol, veh/h	25	138	5	11	167	49	1	4	5	25	1	14
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	0	0	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	34	186	7	15	226	66	1	5	7	34	1	19
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.1	9.5	8	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	15%	5%	62%
Vol Thru, %	40%	82%	74%	3%
Vol Right, %	50%	3%	22%	35%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	168	227	40
LT Vol	1	25	11	25
Through Vol	4	138	167	1
RT Vol	5	5	49	14
Lane Flow Rate	14	227	307	54
Geometry Grp	1	1	1	1
Degree of Util (X)	0.018	0.277	0.357	0.075
Departure Headway (Hd)	4.844	4.386	4.186	4.977
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	738	820	862	719
Service Time	2.881	2.405	2.203	3.01
HCM Lane V/C Ratio	0.019	0.277	0.356	0.075
HCM Control Delay	8	9.1	9.5	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	1.1	1.6	0.2

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	57	0	53	0	0	4	26	163	0	1	203	37
Future Vol, veh/h	57	0	53	0	0	4	26	163	0	1	203	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	0	0	4	0	0	0	0	5	0	0	3	0
Mvmt Flow	72	0	67	0	0	5	33	206	0	1	257	47

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	559	557	282	589	580	207	305	0	0	207	0	0
Stage 1	284	284	-	273	273	-	-	-	-	-	-	-
Stage 2	275	273	-	316	307	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.24	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.336	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	443	442	752	423	428	839	1267	-	-	1376	-	-
Stage 1	727	680	-	737	688	-	-	-	-	-	-	-
Stage 2	736	688	-	699	665	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	430	428	751	376	414	838	1266	-	-	1375	-	-
Mov Cap-2 Maneuver	430	428	-	376	414	-	-	-	-	-	-	-
Stage 1	705	679	-	715	667	-	-	-	-	-	-	-
Stage 2	710	667	-	636	664	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	13.9		9.3		1.1		0	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1266	-	-	542	838	1375	-	-
HCM Lane V/C Ratio	0.026	-	-	0.257	0.006	0.001	-	-
HCM Control Delay (s)	7.9	0	-	13.9	9.3	7.6	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1	0	0	-	-

HCM 6th TWSC
 12: E Main Avenue (OR 104) & Fort Stevens Highway Spur

08/11/2023

Intersection						
Int Delay, s/veh	14					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	130	283	146	91	196	101
Future Vol, veh/h	130	283	146	91	196	101
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	125	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	149	325	168	105	225	116

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	787	221	0	0	273
Stage 1	221	-	-	-	-
Stage 2	566	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	363	824	-	-	1302
Stage 1	821	-	-	-	-
Stage 2	572	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	300	824	-	-	1302
Mov Cap-2 Maneuver	392	-	-	-	-
Stage 1	821	-	-	-	-
Stage 2	473	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	28.2	0	5.5
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	612	1302
HCM Lane V/C Ratio	-	-	0.776	0.173
HCM Control Delay (s)	-	-	28.2	8.3
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	7.3	0.6

Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	77	50	45	143	97	111
Future Vol, veh/h	77	50	45	143	97	111
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	96	63	56	179	121	139

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	482	191	260	0	-	0
Stage 1	191	-	-	-	-	-
Stage 2	291	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	547	856	1316	-	-	-
Stage 1	846	-	-	-	-	-
Stage 2	763	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	521	856	1316	-	-	-
Mov Cap-2 Maneuver	595	-	-	-	-	-
Stage 1	806	-	-	-	-	-
Stage 2	763	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.1	1.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1316	-	595	856	-	-
HCM Lane V/C Ratio	0.043	-	0.162	0.073	-	-
HCM Control Delay (s)	7.9	0	12.2	9.5	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	0.2	-	-

HCM Signalized Intersection Capacity Analysis

14: US 101 & E Harbor Drive

08/11/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	305	35	35	691	623	379
Future Volume (vph)	305	35	35	691	623	379
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.5	4.5	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1646	1488	1662	1733	1733	1458
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1646	1488	1662	1733	1733	1458
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	314	36	36	712	642	391
RTOR Reduction (vph)	0	26	0	0	0	91
Lane Group Flow (vph)	314	10	36	712	642	300
Heavy Vehicles (%)	1%	0%	0%	1%	1%	2%
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	8		1	6	2	8
Permitted Phases		8				2
Actuated Green, G (s)	18.0	18.0	2.9	40.0	33.1	51.1
Effective Green, g (s)	18.0	18.0	2.9	40.0	33.1	51.1
Actuated g/C Ratio	0.27	0.27	0.04	0.60	0.50	0.77
Clearance Time (s)	4.0	4.0	4.0	4.5	4.5	4.0
Vehicle Extension (s)	2.5	2.5	2.5	6.2	6.2	2.5
Lane Grp Cap (vph)	445	402	72	1042	862	1120
v/s Ratio Prot	c0.19		0.02	c0.41	c0.37	0.07
v/s Ratio Perm		0.01				0.13
v/c Ratio	0.71	0.02	0.50	0.68	0.74	0.27
Uniform Delay, d1	21.9	17.8	31.1	9.0	13.3	2.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.7	0.0	3.9	2.9	4.8	0.1
Delay (s)	26.5	17.8	35.0	11.9	18.2	2.3
Level of Service	C	B	D	B	B	A
Approach Delay (s)	25.6			13.0	12.2	
Approach LOS	C			B	B	

Intersection Summary

HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	66.5	Sum of lost time (s)	12.5
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Signalized Intersection Summary

14: US 101 & E Harbor Drive

08/11/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	305	35	35	691	623	379
Future Volume (veh/h)	305	35	35	691	623	379
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1736	1750	1750	1736	1736	1723
Adj Flow Rate, veh/h	314	21	36	712	642	303
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	0	0	1	1	2
Cap, veh/h	373	334	61	1125	959	1135
Arrive On Green	0.23	0.23	0.04	0.65	0.55	0.55
Sat Flow, veh/h	1654	1483	1667	1736	1736	1460
Grp Volume(v), veh/h	314	21	36	712	642	303
Grp Sat Flow(s),veh/h/ln	1654	1483	1667	1736	1736	1460
Q Serve(g_s), s	12.2	0.7	1.4	16.4	17.6	3.9
Cycle Q Clear(g_c), s	12.2	0.7	1.4	16.4	17.6	3.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	373	334	61	1125	959	1135
V/C Ratio(X)	0.84	0.06	0.59	0.63	0.67	0.27
Avail Cap(c_a), veh/h	641	574	149	1436	1177	1319
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.9	20.4	31.8	7.0	10.7	2.1
Incr Delay (d2), s/veh	3.9	0.1	6.7	2.4	3.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.2	0.6	4.4	5.8	2.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	28.8	20.5	38.5	9.4	14.0	2.6
LnGrp LOS	C	C	D	A	B	A
Approach Vol, veh/h	335			748	945	
Approach Delay, s/veh	28.3			10.8	10.4	
Approach LOS	C			B	B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.4	41.6			48.0	19.1
Change Period (Y+Rc), s	4.0	4.5			4.5	4.0
Max Green Setting (Gmax), s	6.0	45.5			55.5	26.0
Max Q Clear Time (g_c+I1), s	3.4	19.6			18.4	14.2
Green Ext Time (p_c), s	0.0	17.4			20.8	1.0
Intersection Summary						
HCM 6th Ctrl Delay			13.5			
HCM 6th LOS			B			

HCM 6th TWSC
 15: Fort Stevens Highway Spur & SE Ensign Lane

08/11/2023

Intersection						
Int Delay, s/veh	7.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗		↑
Traffic Vol, veh/h	287	26	27	260	80	104
Future Vol, veh/h	287	26	27	260	80	104
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	175	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	1
Mvmt Flow	326	30	31	295	91	118




























Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	331	31	0	0	326
Stage 1	31	-	-	-	-
Stage 2	300	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	668	1049	-	-	1245
Stage 1	997	-	-	-	-
Stage 2	756	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	616	1049	-	-	1245
Mov Cap-2 Maneuver	616	-	-	-	-
Stage 1	997	-	-	-	-
Stage 2	697	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.5	0	3.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	616	1049	1245	-
HCM Lane V/C Ratio	-	-	0.529	0.028	0.073	-
HCM Control Delay (s)	-	-	17.2	8.5	8.1	-
HCM Lane LOS	-	-	C	A	A	-
HCM 95th %tile Q(veh)	-	-	3.1	0.1	0.2	-

HCM Signalized Intersection Capacity Analysis
 16: OR 101 & SE Ensign Lane

08/11/2023

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations				 				 			 	 	
Traffic Volume (vph)	218	251	141	115	257	84	59	353	240	187	422	67	
Future Volume (vph)	218	251	141	115	257	84	59	353	240	187	422	67	
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	
Total Lost time (s)	4.0	4.5		4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.5		
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95		
Frbp, ped/bikes	1.00	0.99		1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00		
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1662	1644		3225	1750	1488	1662	3292	1449	1646	3246		
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1662	1644		3225	1750	1488	1662	3292	1449	1646	3246		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	
Adj. Flow (vph)	229	264	148	121	271	88	62	372	253	197	444	71	
RTOR Reduction (vph)	0	17	0	0	0	52	0	0	176	0	11	0	
Lane Group Flow (vph)	229	395	0	121	271	36	62	372	77	197	504	0	
Confl. Peds. (#/hr)			8	8					1	1		1	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		
Protected Phases	3	8		7	4	5	1	6	7	5	2		
Permitted Phases						4			6				
Actuated Green, G (s)	17.8	32.8		7.6	22.6	38.5	6.6	21.2	28.8	15.9	30.5		
Effective Green, g (s)	17.8	32.8		7.6	22.6	38.5	6.6	21.2	28.8	15.9	30.5		
Actuated g/C Ratio	0.19	0.35		0.08	0.24	0.41	0.07	0.22	0.30	0.17	0.32		
Clearance Time (s)	4.0	4.5		4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.5		
Vehicle Extension (s)	2.5	6.2		2.5	6.2	2.5	2.5	6.2	2.5	2.5	6.2		
Lane Grp Cap (vph)	313	570		259	418	606	116	738	441	276	1047		
v/s Ratio Prot	c0.14	c0.24		0.04	0.15	0.01	0.04	0.11	0.01	c0.12	c0.16		
v/s Ratio Perm						0.01			0.04				
v/c Ratio	0.73	0.69		0.47	0.65	0.06	0.53	0.50	0.17	0.71	0.48		
Uniform Delay, d1	36.1	26.5		41.5	32.4	17.0	42.5	32.1	24.1	37.1	25.7		
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	8.1	5.6		1.0	5.8	0.0	3.6	1.6	0.1	7.9	1.0		
Delay (s)	44.2	32.1		42.5	38.1	17.0	46.1	33.7	24.3	45.1	26.7		
Level of Service	D	C		D	D	B	D	C	C	D	C		
Approach Delay (s)		36.4			35.4			31.3			31.8		
Approach LOS		D			D			C			C		
Intersection Summary													
HCM 2000 Control Delay			33.5									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.69										
Actuated Cycle Length (s)			94.5									Sum of lost time (s)	17.0
Intersection Capacity Utilization			65.2%									ICU Level of Service	C
Analysis Period (min)			15										

c Critical Lane Group

HCM 6th Signalized Intersection Summary
 16: OR 101 & SE Ensign Lane

08/11/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↘		↗↘	↑	↗	↗	↑↑	↗	↗	↗↘	↗↘
Traffic Volume (veh/h)	218	251	141	115	257	84	59	353	240	187	422	67
Future Volume (veh/h)	218	251	141	115	257	84	59	353	240	187	422	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1750	1750	1750	1750	1736	1736	1736	1750	1750
Adj Flow Rate, veh/h	229	264	132	121	271	46	62	372	137	197	444	60
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	1	1	0	0
Cap, veh/h	276	373	187	191	409	557	78	796	442	239	997	134
Arrive On Green	0.17	0.34	0.34	0.06	0.23	0.23	0.05	0.24	0.24	0.14	0.34	0.34
Sat Flow, veh/h	1667	1098	549	3233	1750	1468	1667	3299	1468	1654	2945	396
Grp Volume(v), veh/h	229	0	396	121	271	46	62	372	137	197	250	254
Grp Sat Flow(s),veh/h/ln	1667	0	1647	1617	1750	1468	1667	1650	1468	1654	1663	1678
Q Serve(g_s), s	10.5	0.0	16.5	2.9	11.1	1.6	2.9	7.6	5.7	9.1	9.2	9.3
Cycle Q Clear(g_c), s	10.5	0.0	16.5	2.9	11.1	1.6	2.9	7.6	5.7	9.1	9.2	9.3
Prop In Lane	1.00		0.33	1.00		1.00	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	276	0	560	191	409	557	78	796	442	239	563	568
V/C Ratio(X)	0.83	0.00	0.71	0.63	0.66	0.08	0.79	0.47	0.31	0.83	0.44	0.45
Avail Cap(c_a), veh/h	485	0	896	368	642	753	211	1295	663	419	863	871
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.9	0.0	22.7	36.3	27.5	15.8	37.3	25.6	21.3	32.8	20.3	20.4
Incr Delay (d2), s/veh	4.8	0.0	6.5	2.6	7.3	0.3	12.3	1.7	1.6	5.4	2.2	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	7.2	1.2	5.2	0.6	1.4	2.9	2.1	3.8	3.6	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.7	0.0	29.2	38.9	34.7	16.0	49.5	27.4	22.9	38.2	22.6	22.6
LnGrp LOS	D	A	C	D	C	B	D	C	C	D	C	C
Approach Vol, veh/h		625			438			571			701	
Approach Delay, s/veh		31.9			33.9			28.7			27.0	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.7	31.2	17.1	23.0	15.4	23.6	8.7	31.4				
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5				
Max Green Setting (Gmax), s	10.0	41.0	23.0	29.0	20.0	31.0	9.0	43.0				
Max Q Clear Time (g_c+I1), s	4.9	11.3	12.5	13.1	11.1	9.6	4.9	18.5				
Green Ext Time (p_c), s	0.0	11.3	0.7	3.3	0.4	9.2	0.1	6.0				

Intersection Summary

HCM 6th Ctrl Delay	30.0
HCM 6th LOS	C

Notes

User approved changes to right turn type.

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	24	17	40	3	9	8	9	55	11	11	1
Future Vol, veh/h	1	24	17	40	3	9	8	9	55	11	11	1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	0	5	0	3	0	0	0	0	4	0	0	0
Mvmt Flow	1	28	20	47	4	11	9	11	65	13	13	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.2	7.6	7.1	7.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	2%	77%	48%
Vol Thru, %	12%	57%	6%	48%
Vol Right, %	76%	40%	17%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	72	42	52	23
LT Vol	8	1	40	11
Through Vol	9	24	3	11
RT Vol	55	17	9	1
Lane Flow Rate	85	49	61	27
Geometry Grp	1	1	1	1
Degree of Util (X)	0.086	0.054	0.072	0.032
Departure Headway (Hd)	3.675	3.902	4.233	4.226
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	965	911	842	839
Service Time	1.736	1.954	2.278	2.291
HCM Lane V/C Ratio	0.088	0.054	0.072	0.032
HCM Control Delay	7.1	7.2	7.6	7.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.2	0.2	0.1

HCM 6th TWSC
2: NW Ridge Road & Peter Iredale Road

08/11/2023

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕			↕	
Traffic Vol, veh/h	10	3	14	19	3	8	20	43	5	3	90	6
Future Vol, veh/h	10	3	14	19	3	8	20	43	5	3	90	6
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	2	2	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	9	0	0	0	0	3	0	0	0	0
Mvmt Flow	11	3	16	21	3	9	22	48	6	3	100	7

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	214	212	106	216	212	54	109	0	0	56	0	0
Stage 1	112	112	-	97	97	-	-	-	-	-	-	-
Stage 2	102	100	-	119	115	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.29	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.381	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	747	689	930	745	689	1019	1494	-	-	1562	-	-
Stage 1	898	807	-	914	819	-	-	-	-	-	-	-
Stage 2	909	816	-	890	804	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	726	675	928	719	675	1016	1491	-	-	1559	-	-
Mov Cap-2 Maneuver	726	675	-	719	675	-	-	-	-	-	-	-
Stage 1	883	804	-	898	805	-	-	-	-	-	-	-
Stage 2	883	802	-	870	801	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	9.9	2.2	0.2
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1491	-	-	714	928	774	1559	-	-
HCM Lane V/C Ratio	0.015	-	-	0.02	0.017	0.043	0.002	-	-
HCM Control Delay (s)	7.5	0	-	10.1	8.9	9.9	7.3	0	-
HCM Lane LOS	A	A	-	B	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.1	0	-	-

HCM 6th TWSC
3: NW Ridge Road & North Site Access

08/11/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	68	0	0	123
Future Vol, veh/h	0	0	68	0	0	123
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	0	0	1
Mvmt Flow	0	0	76	0	0	137

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	213	76	0	0	76	0
Stage 1	76	-	-	-	-	-
Stage 2	137	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	780	991	-	-	1536	-
Stage 1	952	-	-	-	-	-
Stage 2	895	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	780	991	-	-	1536	-
Mov Cap-2 Maneuver	780	-	-	-	-	-
Stage 1	952	-	-	-	-	-
Stage 2	895	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1536	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

HCM 6th TWSC
4: NW Ridge Road & Main Site Access

08/11/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	68	0	0	123
Future Vol, veh/h	0	0	68	0	0	123
Conflicting Peds, #/hr	0	1	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	0	0	1
Mvmt Flow	0	0	76	0	0	137

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	213	77	0	0	76
Stage 1	76	-	-	-	-
Stage 2	137	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	780	990	-	-	1536
Stage 1	952	-	-	-	-
Stage 2	895	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	780	989	-	-	1536
Mov Cap-2 Maneuver	780	-	-	-	-
Stage 1	952	-	-	-	-
Stage 2	895	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1536	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 6th TWSC
5: NW Ridge Road & South Site Access

08/11/2023

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	68	0	0	123
Future Vol, veh/h	0	0	68	0	0	123
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	0	0	1
Mvmt Flow	0	0	76	0	0	137

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	213	78	0	0	76	0
Stage 1	76	-	-	-	-	-
Stage 2	137	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	780	988	-	-	1536	-
Stage 1	952	-	-	-	-	-
Stage 2	895	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	780	986	-	-	1536	-
Mov Cap-2 Maneuver	780	-	-	-	-	-
Stage 1	952	-	-	-	-	-
Stage 2	895	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1536	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0

HCM 6th TWSC
6: NW Ridge Road & SW 9th Street

08/11/2023

Intersection						
Int Delay, s/veh	4.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	125	215	13	148	182
Future Vol, veh/h	5	125	215	13	148	182
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	7	167	287	17	197	243

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	933	296	0	0	304	0
Stage 1	296	-	-	-	-	-
Stage 2	637	-	-	-	-	-
Critical Hdwy	6.4	6.21	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	-	-	2.2	-
Pot Cap-1 Maneuver	298	746	-	-	1268	-
Stage 1	759	-	-	-	-	-
Stage 2	531	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	244	746	-	-	1268	-
Mov Cap-2 Maneuver	244	-	-	-	-	-
Stage 1	759	-	-	-	-	-
Stage 2	435	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	3.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	691	1268
HCM Lane V/C Ratio	-	-	0.251	0.156
HCM Control Delay (s)	-	-	11.9	8.4
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	1	0.6

HCM 6th TWSC
 7: 18th Street/NW Ridge Road & Delaura Beach Lane

08/11/2023

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	4	32	6	45	77	1
Future Vol, veh/h	4	32	6	45	77	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	0	0	0	3	0	0
Mvmt Flow	5	41	8	58	99	1

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	174	100	100	0	0
Stage 1	100	-	-	-	-
Stage 2	74	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	821	961	1505	-	-
Stage 1	929	-	-	-	-
Stage 2	954	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	817	961	1505	-	-
Mov Cap-2 Maneuver	817	-	-	-	-
Stage 1	924	-	-	-	-
Stage 2	954	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1505	-	943	-	-
HCM Lane V/C Ratio	0.005	-	0.049	-	-
HCM Control Delay (s)	7.4	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

HCM 6th TWSC
8: NW Ridge Road & Delaura Beach Lane

08/11/2023

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	0	3	1	8	0	0	0	0	33	0	77	1
Future Vol, veh/h	0	3	1	8	0	0	0	0	33	0	77	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	66	66	66	66	66	66	66	66	66	66	66	66
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	2	0
Mvmt Flow	0	5	2	12	0	0	0	0	50	0	117	2

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	-	168	118	147	144	-	119	0	0	50	0	0
Stage 1	-	118	-	25	25	-	-	-	-	-	-	-
Stage 2	-	50	-	122	119	-	-	-	-	-	-	-
Critical Hdwy	-	6.5	6.2	7.1	6.5	-	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	-	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	-	4	3.3	3.5	4	-	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	0	728	939	826	751	0	1482	-	-	1570	-	-
Stage 1	0	802	-	998	878	0	-	-	-	-	-	-
Stage 2	0	857	-	887	801	0	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	-	728	939	821	751	-	1482	-	-	1570	-	-
Mov Cap-2 Maneuver	-	728	-	821	751	-	-	-	-	-	-	-
Stage 1	-	802	-	998	878	-	-	-	-	-	-	-
Stage 2	-	857	-	881	801	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	9.7		9.5		0			0		
HCM LOS	A		A							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1482	-	-	771	821	1570	-	-
HCM Lane V/C Ratio	-	-	-	0.008	0.015	-	-	-
HCM Control Delay (s)	0	-	-	9.7	9.5	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

HCM 6th AWSC

9: E Main Avenue (OR 104)/NE Skipanon Drive & Fort Stevens Highway/E Harbor Drive 08/11/2023

Intersection	
Intersection Delay, s/veh	13.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↶	↷		↶	↷
Traffic Vol, veh/h	4	222	79	89	85	23	43	24	159	41	25	0
Future Vol, veh/h	4	222	79	89	85	23	43	24	159	41	25	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	25	4	1	1	8	29	5	32	1	50	22	0
Mvmt Flow	5	264	94	106	101	27	51	29	189	49	30	0
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	16.6	10.9	11.7	12.4
HCM LOS	C	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	64%	0%	100%	0%	100%	0%	62%	0%
Vol Thru, %	36%	0%	0%	74%	0%	79%	38%	100%
Vol Right, %	0%	100%	0%	26%	0%	21%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	67	159	4	301	89	108	66	0
LT Vol	43	0	4	0	89	0	41	0
Through Vol	24	0	0	222	0	85	25	0
RT Vol	0	159	0	79	0	23	0	0
Lane Flow Rate	80	189	5	358	106	129	79	0
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.151	0.329	0.009	0.587	0.198	0.221	0.173	0
Departure Headway (Hd)	6.818	6.249	6.951	5.896	6.714	6.175	7.932	7.13
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	525	574	514	613	533	580	451	0
Service Time	4.574	4.004	4.7	3.644	4.471	3.931	5.704	4.901
HCM Lane V/C Ratio	0.152	0.329	0.01	0.584	0.199	0.222	0.175	0
HCM Control Delay	10.8	12.1	9.8	16.7	11.1	10.7	12.4	9.9
HCM Lane LOS	B	B	A	C	B	B	B	N
HCM 95th-tile Q	0.5	1.4	0	3.8	0.7	0.8	0.6	0

Intersection

Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	21	102	3	0	54	23	0	1	4	29	0	13
Future Vol, veh/h	21	102	3	0	54	23	0	1	4	29	0	13
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	6	0	0	0	0	0	0	0	0	9	0	0
Mvmt Flow	28	134	4	0	71	30	0	1	5	38	0	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.3	7.5	7.1	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	17%	0%	69%
Vol Thru, %	20%	81%	70%	0%
Vol Right, %	80%	2%	30%	31%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	126	77	42
LT Vol	0	21	0	29
Through Vol	1	102	54	0
RT Vol	4	3	23	13
Lane Flow Rate	7	166	101	55
Geometry Grp	1	1	1	1
Degree of Util (X)	0.007	0.194	0.111	0.071
Departure Headway (Hd)	4.068	4.206	3.954	4.596
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	885	846	893	784
Service Time	2.07	2.27	2.041	2.596
HCM Lane V/C Ratio	0.008	0.196	0.113	0.07
HCM Control Delay	7.1	8.3	7.5	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.7	0.4	0.2

Intersection												
Int Delay, s/veh	5.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	74	3	65	0	3	2	111	303	2	7	237	107
Future Vol, veh/h	74	3	65	0	3	2	111	303	2	7	237	107
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	0	0	0	0	0	0	0	1	0	0	0	2
Mvmt Flow	86	3	76	0	3	2	129	352	2	8	276	124

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	969	967	339	1005	1028	353	401	0	0	354	0	0
Stage 1	355	355	-	611	611	-	-	-	-	-	-	-
Stage 2	614	612	-	394	417	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	235	256	708	222	236	695	1169	-	-	1216	-	-
Stage 1	666	633	-	484	487	-	-	-	-	-	-	-
Stage 2	483	487	-	635	595	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	205	218	707	174	201	695	1168	-	-	1216	-	-
Mov Cap-2 Maneuver	205	218	-	174	201	-	-	-	-	-	-	-
Stage 1	573	627	-	417	420	-	-	-	-	-	-	-
Stage 2	412	420	-	559	589	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	30.1		18.1		2.3		0.2	
HCM LOS	D		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1168	-	-	304	281	1216	-
HCM Lane V/C Ratio	0.111	-	-	0.543	0.021	0.007	-
HCM Control Delay (s)	8.5	0	-	30.1	18.1	8	0
HCM Lane LOS	A	A	-	D	C	A	A
HCM 95th %tile Q(veh)	0.4	-	-	3	0.1	0	-

Intersection						
Int Delay, s/veh	5.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	43	99	75	83	156	120
Future Vol, veh/h	43	99	75	83	156	120
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	125	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	3	1	12	0	1	5
Mvmt Flow	53	122	93	102	193	148

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	678	144	0	0	195
Stage 1	144	-	-	-	-
Stage 2	534	-	-	-	-
Critical Hdwy	6.43	6.21	-	-	4.11
Critical Hdwy Stg 1	5.43	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-
Follow-up Hdwy	3.527	3.309	-	-	2.209
Pot Cap-1 Maneuver	416	906	-	-	1384
Stage 1	881	-	-	-	-
Stage 2	586	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	358	906	-	-	1384
Mov Cap-2 Maneuver	432	-	-	-	-
Stage 1	881	-	-	-	-
Stage 2	505	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.1	0	4.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	680	1384
HCM Lane V/C Ratio	-	-	0.258	0.139
HCM Control Delay (s)	-	-	12.1	8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	1	0.5

Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	76	18	16	73	118	28
Future Vol, veh/h	76	18	16	73	118	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	0	0	0	9	3	0
Mvmt Flow	99	23	21	95	153	36

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	308	171	189	0	-	0
Stage 1	171	-	-	-	-	-
Stage 2	137	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	688	878	1397	-	-	-
Stage 1	864	-	-	-	-	-
Stage 2	895	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	677	878	1397	-	-	-
Mov Cap-2 Maneuver	706	-	-	-	-	-
Stage 1	850	-	-	-	-	-
Stage 2	895	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.6	1.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1397	-	706	878	-	-
HCM Lane V/C Ratio	0.015	-	0.14	0.027	-	-
HCM Control Delay (s)	7.6	0	10.9	9.2	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.5	0.1	-	-

HCM Signalized Intersection Capacity Analysis

14: US 101 & E Harbor Drive

08/11/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	228	10	15	411	409	191
Future Volume (vph)	228	10	15	411	409	191
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.5	4.5	4.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1525	1488	1662	1699	1716	1403
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1525	1488	1662	1699	1716	1403
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	256	11	17	462	460	215
RTOR Reduction (vph)	0	8	0	0	0	114
Lane Group Flow (vph)	256	3	17	462	460	101
Heavy Vehicles (%)	9%	0%	0%	3%	2%	6%
Turn Type	Prot	Perm	Prot	NA	NA	Perm
Protected Phases	8		1	6	2	
Permitted Phases		8				2
Actuated Green, G (s)	14.8	14.8	0.7	29.3	24.6	24.6
Effective Green, g (s)	14.8	14.8	0.7	29.3	24.6	24.6
Actuated g/C Ratio	0.28	0.28	0.01	0.56	0.47	0.47
Clearance Time (s)	4.0	4.0	4.0	4.5	4.5	4.5
Vehicle Extension (s)	2.5	2.5	2.5	6.2	6.2	6.2
Lane Grp Cap (vph)	429	418	22	946	802	656
v/s Ratio Prot	c0.17		0.01	c0.27	c0.27	
v/s Ratio Perm		0.00				0.07
v/c Ratio	0.60	0.01	0.77	0.49	0.57	0.15
Uniform Delay, d1	16.3	13.6	25.9	7.1	10.2	8.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.0	90.4	1.2	2.1	0.3
Delay (s)	18.2	13.6	116.2	8.3	12.2	8.4
Level of Service	B	B	F	A	B	A
Approach Delay (s)	18.0			12.1	11.0	
Approach LOS	B			B	B	

Intersection Summary

HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	52.6	Sum of lost time (s)	12.5
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Signalized Intersection Summary

14: US 101 & E Harbor Drive

08/11/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	228	10	15	411	409	191
Future Volume (veh/h)	228	10	15	411	409	191
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1627	1750	1750	1709	1723	1668
Adj Flow Rate, veh/h	256	5	17	462	460	153
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	9	0	0	3	2	6
Cap, veh/h	325	311	35	1045	871	715
Arrive On Green	0.21	0.21	0.02	0.61	0.51	0.51
Sat Flow, veh/h	1550	1483	1667	1709	1723	1414
Grp Volume(v), veh/h	256	5	17	462	460	153
Grp Sat Flow(s),veh/h/ln	1550	1483	1667	1709	1723	1414
Q Serve(g_s), s	7.4	0.1	0.5	6.8	8.5	2.8
Cycle Q Clear(g_c), s	7.4	0.1	0.5	6.8	8.5	2.8
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	325	311	35	1045	871	715
V/C Ratio(X)	0.79	0.02	0.48	0.44	0.53	0.21
Avail Cap(c_a), veh/h	914	875	211	1926	1579	1295
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	17.8	14.9	23.0	4.9	7.9	6.5
Incr Delay (d2), s/veh	3.2	0.0	7.4	1.2	2.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	0.2	1.3	2.3	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.9	14.9	30.4	6.1	9.9	7.1
LnGrp LOS	C	B	C	A	A	A
Approach Vol, veh/h				479	613	
Approach Delay, s/veh				20.8	7.0	9.2
Approach LOS				C	A	A
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.0	28.5			33.5	14.0
Change Period (Y+Rc), s	4.0	4.5			4.5	4.0
Max Green Setting (Gmax), s	6.0	43.5			53.5	28.0
Max Q Clear Time (g_c+I1), s	2.5	10.5			8.8	9.4
Green Ext Time (p_c), s	0.0	13.5			13.3	0.9

Intersection Summary

HCM 6th Ctrl Delay			10.7			
HCM 6th LOS			B			

HCM 6th TWSC
 15: Fort Stevens Highway Spur & SE Ensign Lane

08/11/2023

Intersection						
Int Delay, s/veh	3.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗		↑
Traffic Vol, veh/h	105	14	18	209	45	52
Future Vol, veh/h	105	14	18	209	45	52
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	175	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	1	0	4
Mvmt Flow	121	16	21	240	52	60

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	185	21	0	0	261
Stage 1	21	-	-	-	-
Stage 2	164	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	809	1062	-	-	1315
Stage 1	1007	-	-	-	-
Stage 2	870	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	776	1062	-	-	1315
Mov Cap-2 Maneuver	776	-	-	-	-
Stage 1	1007	-	-	-	-
Stage 2	834	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	3.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	776	1062	1315	-
HCM Lane V/C Ratio	-	-	0.156	0.015	0.039	-
HCM Control Delay (s)	-	-	10.5	8.4	7.8	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0	0.1	-

HCM Signalized Intersection Capacity Analysis
 16: OR 101 & SE Ensign Lane

08/11/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	109	64	64	123	213	49	289	110	78	236	36
Future Volume (vph)	118	109	64	64	123	213	49	289	110	78	236	36
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5		4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.5	
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1630	1610		3225	1733	1473	1630	3260	1458	1646	3104	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1630	1610		3225	1733	1473	1630	3260	1458	1646	3104	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	126	116	68	68	131	227	52	307	117	83	251	38
RTOR Reduction (vph)	0	20	0	0	0	139	0	0	77	0	10	0
Lane Group Flow (vph)	126	164	0	68	131	88	52	307	40	83	279	0
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	2%	0%	6%	0%	1%	1%	2%	2%	2%	1%	5%	5%
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	3	8		7	4	5	1	6	7	5	2	
Permitted Phases						4			6			
Actuated Green, G (s)	9.0	21.7		6.2	18.9	27.9	4.6	18.4	24.6	9.0	22.8	
Effective Green, g (s)	9.0	21.7		6.2	18.9	27.9	4.6	18.4	24.6	9.0	22.8	
Actuated g/C Ratio	0.12	0.30		0.09	0.26	0.39	0.06	0.25	0.34	0.12	0.32	
Clearance Time (s)	4.0	4.5		4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.5	
Vehicle Extension (s)	2.5	6.2		2.5	6.2	2.5	2.5	6.2	2.5	2.5	6.2	
Lane Grp Cap (vph)	202	483		276	453	568	103	829	496	204	978	
v/s Ratio Prot	c0.08	c0.10		0.02	0.08	0.02	0.03	c0.09	0.01	c0.05	0.09	
v/s Ratio Perm						0.04			0.02			
v/c Ratio	0.62	0.34		0.25	0.29	0.15	0.50	0.37	0.08	0.41	0.29	
Uniform Delay, d1	30.0	19.7		30.9	21.3	14.5	32.7	22.2	16.2	29.2	18.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.1	1.2		0.3	1.1	0.1	2.8	0.8	0.1	1.0	0.5	
Delay (s)	35.1	21.0		31.2	22.4	14.6	35.6	23.0	16.2	30.2	19.1	
Level of Service	D	C		C	C	B	D	C	B	C	B	
Approach Delay (s)		26.7			19.6			22.7			21.6	
Approach LOS		C			B			C			C	
Intersection Summary												
HCM 2000 Control Delay			22.4									HCM 2000 Level of Service C
HCM 2000 Volume to Capacity ratio			0.41									
Actuated Cycle Length (s)			72.3								17.0	Sum of lost time (s)
Intersection Capacity Utilization			43.0%									ICU Level of Service A
Analysis Period (min)			15									

c Critical Lane Group

HCM 6th Signalized Intersection Summary
 16: OR 101 & SE Ensign Lane

08/11/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶↷	↶	↷	↶	↶↶	↷	↶	↶↷	
Traffic Volume (veh/h)	118	109	64	64	123	213	49	289	110	78	236	36
Future Volume (veh/h)	118	109	64	64	123	213	49	289	110	78	236	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1750	1668	1750	1736	1736	1723	1723	1723	1736	1682	1682
Adj Flow Rate, veh/h	126	116	47	68	131	126	52	307	64	83	251	27
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	0	6	0	1	1	2	2	2	1	5	5
Cap, veh/h	166	287	116	199	354	402	85	914	498	114	864	92
Arrive On Green	0.10	0.24	0.24	0.06	0.20	0.20	0.05	0.28	0.28	0.07	0.30	0.30
Sat Flow, veh/h	1641	1179	478	3233	1736	1471	1641	3273	1460	1654	2913	310
Grp Volume(v), veh/h	126	0	163	68	131	126	52	307	64	83	137	141
Grp Sat Flow(s),veh/h/ln	1641	0	1657	1617	1736	1471	1641	1637	1460	1654	1598	1626
Q Serve(g_s), s	3.7	0.0	4.0	1.0	3.2	3.3	1.5	3.7	1.5	2.4	3.2	3.3
Cycle Q Clear(g_c), s	3.7	0.0	4.0	1.0	3.2	3.3	1.5	3.7	1.5	2.4	3.2	3.3
Prop In Lane	1.00		0.29	1.00		1.00	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	166	0	403	199	354	402	85	914	498	114	474	482
V/C Ratio(X)	0.76	0.00	0.40	0.34	0.37	0.31	0.61	0.34	0.13	0.73	0.29	0.29
Avail Cap(c_a), veh/h	703	0	1504	594	1152	1077	368	2304	1118	506	1255	1277
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	0.0	15.6	22.0	16.8	14.2	22.8	14.0	11.1	22.4	13.3	13.3
Incr Delay (d2), s/veh	5.3	0.0	2.6	0.7	2.6	1.8	5.2	0.9	0.5	6.4	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	1.7	0.4	1.4	1.2	0.6	1.2	0.5	1.0	1.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.7	0.0	18.2	22.8	19.4	16.0	28.0	14.9	11.6	28.7	14.6	14.6
LnGrp LOS	C	A	B	C	B	B	C	B	B	C	B	B
Approach Vol, veh/h		289			325			423				361
Approach Delay, s/veh		21.9			18.8			16.0				17.9
Approach LOS		C			B			B				B
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.5	19.0	9.0	14.5	7.4	18.2	7.0	16.4				
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5				
Max Green Setting (Gmax), s	11.0	38.5	21.0	32.5	15.0	34.5	9.0	44.5				
Max Q Clear Time (g_c+I1), s	3.5	5.3	5.7	5.3	4.4	5.7	3.0	6.0				
Green Ext Time (p_c), s	0.1	6.2	0.4	3.1	0.1	8.0	0.1	2.5				

Intersection Summary

HCM 6th Ctrl Delay	18.4
HCM 6th LOS	B

Notes

User approved changes to right turn type.

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	29	41	115	48	10	19	36	144	11	18	5
Future Vol, veh/h	2	29	41	115	48	10	19	36	144	11	18	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	1	0	0	0
Mvmt Flow	2	32	45	125	52	11	21	39	157	12	20	5
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.8	9.1	8.6	8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	3%	66%	32%
Vol Thru, %	18%	40%	28%	53%
Vol Right, %	72%	57%	6%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	199	72	173	34
LT Vol	19	2	115	11
Through Vol	36	29	48	18
RT Vol	144	41	10	5
Lane Flow Rate	216	78	188	37
Geometry Grp	1	1	1	1
Degree of Util (X)	0.249	0.094	0.242	0.049
Departure Headway (Hd)	4.151	4.34	4.637	4.736
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	865	824	775	756
Service Time	2.174	2.373	2.666	2.768
HCM Lane V/C Ratio	0.25	0.095	0.243	0.049
HCM Control Delay	8.6	7.8	9.1	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1	0.3	0.9	0.2

HCM 6th TWSC
2: NW Ridge Road & Peter Iredale Road

08/11/2023

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕			↕	
Traffic Vol, veh/h	44	6	61	19	14	14	92	178	44	14	120	64
Future Vol, veh/h	44	6	61	19	14	14	92	178	44	14	120	64
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	0	0
Mvmt Flow	48	7	66	21	15	15	100	193	48	15	130	70

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	629	638	166	650	649	219	201	0	0	242	0	0
Stage 1	196	196	-	418	418	-	-	-	-	-	-	-
Stage 2	433	442	-	232	231	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	398	397	884	385	391	826	1383	-	-	1336	-	-
Stage 1	810	742	-	616	594	-	-	-	-	-	-	-
Stage 2	605	580	-	775	717	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	349	358	883	325	353	824	1382	-	-	1335	-	-
Mov Cap-2 Maneuver	349	358	-	325	353	-	-	-	-	-	-	-
Stage 1	741	732	-	564	544	-	-	-	-	-	-	-
Stage 2	528	531	-	701	707	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.9		15.1		2.3		0.5	
HCM LOS	B		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1382	-	-	350	883	408	1335	-	-
HCM Lane V/C Ratio	0.072	-	-	0.155	0.075	0.125	0.011	-	-
HCM Control Delay (s)	7.8	0	-	17.2	9.4	15.1	7.7	0	-
HCM Lane LOS	A	A	-	C	A	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.5	0.2	0.4	0	-	-

HCM 6th TWSC
 3: NW Ridge Road & North Site Access

08/11/2023

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	54	18	296	19	6	194
Future Vol, veh/h	54	18	296	19	6	194
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	59	20	322	21	7	211

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	558	333	0	0	343
Stage 1	333	-	-	-	-
Stage 2	225	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	494	713	-	-	1227
Stage 1	731	-	-	-	-
Stage 2	817	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	491	713	-	-	1227
Mov Cap-2 Maneuver	491	-	-	-	-
Stage 1	731	-	-	-	-
Stage 2	812	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	532	1227
HCM Lane V/C Ratio	-	-	0.147	0.005
HCM Control Delay (s)	-	-	12.9	8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0

HCM 6th TWSC
4: NW Ridge Road & Main Site Access

08/11/2023

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	37	18	297	12	6	242
Future Vol, veh/h	37	18	297	12	6	242
Conflicting Peds, #/hr	0	1	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	40	20	323	13	7	263

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	607	331	0	0	336
Stage 1	330	-	-	-	-
Stage 2	277	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	463	715	-	-	1235
Stage 1	733	-	-	-	-
Stage 2	774	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	460	714	-	-	1235
Mov Cap-2 Maneuver	460	-	-	-	-
Stage 1	733	-	-	-	-
Stage 2	769	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.8	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	521	1235
HCM Lane V/C Ratio	-	-	0.115	0.005
HCM Control Delay (s)	-	-	12.8	7.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0

HCM 6th TWSC
5: NW Ridge Road & South Site Access

08/11/2023

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	37	19	290	12	6	273
Future Vol, veh/h	37	19	290	12	6	273
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	40	21	315	13	7	297

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	633	324	0	0	328
Stage 1	322	-	-	-	-
Stage 2	311	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	447	722	-	-	1243
Stage 1	739	-	-	-	-
Stage 2	748	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	444	721	-	-	1243
Mov Cap-2 Maneuver	444	-	-	-	-
Stage 1	739	-	-	-	-
Stage 2	743	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	511	1243
HCM Lane V/C Ratio	-	-	0.119	0.005
HCM Control Delay (s)	-	-	13	7.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0

Intersection						
Int Delay, s/veh	4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	94	93	6	145	203
Future Vol, veh/h	11	94	93	6	145	203
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	0	4	2	0	0	0
Mvmt Flow	14	119	118	8	184	257

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	747	122	0	0	126	0
Stage 1	122	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Critical Hdwy	6.4	6.24	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	-	-	2.2	-
Pot Cap-1 Maneuver	383	924	-	-	1473	-
Stage 1	908	-	-	-	-	-
Stage 2	537	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	327	924	-	-	1473	-
Mov Cap-2 Maneuver	327	-	-	-	-	-
Stage 1	908	-	-	-	-	-
Stage 2	459	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	3.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	776	1473
HCM Lane V/C Ratio	-	-	0.171	0.125
HCM Control Delay (s)	-	-	10.6	7.8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.6	0.4

HCM 6th TWSC
7: 18th Street/NW Ridge Road & Delaura Beach Lane

08/11/2023

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	80	19	166	160	6
Future Vol, veh/h	11	80	19	166	160	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	0	2	0	0	0	0
Mvmt Flow	13	96	23	200	193	7

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	443	197	200	0	-	0
Stage 1	197	-	-	-	-	-
Stage 2	246	-	-	-	-	-
Critical Hdwy	6.4	6.22	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.318	2.2	-	-	-
Pot Cap-1 Maneuver	576	844	1384	-	-	-
Stage 1	841	-	-	-	-	-
Stage 2	800	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	565	844	1384	-	-	-
Mov Cap-2 Maneuver	565	-	-	-	-	-
Stage 1	825	-	-	-	-	-
Stage 2	800	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1384	-	796	-	-
HCM Lane V/C Ratio	0.017	-	0.138	-	-
HCM Control Delay (s)	7.6	0	10.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

HCM 6th TWSC
 8: NW Ridge Road & Delaura Beach Lane

08/11/2023

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↗			↖			↔			↔	
Traffic Vol, veh/h	0	3	5	27	0	0	3	0	81	0	100	6
Future Vol, veh/h	0	3	5	27	0	0	3	0	81	0	100	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0	0	0	2	0	0	0
Mvmt Flow	0	4	7	36	0	0	4	0	107	0	132	8

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	251	136	204	202	-	140	0	0	107	0	0
Stage 1	-	136	-	62	62	-	-	-	-	-	-	-
Stage 2	-	115	-	142	140	-	-	-	-	-	-	-
Critical Hdwy	-	6.5	6.2	7.1	6.5	-	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	-	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	-	4	3.3	3.5	4	-	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	0	656	918	758	698	0	1456	-	-	1497	-	-
Stage 1	0	788	-	954	847	0	-	-	-	-	-	-
Stage 2	0	804	-	866	785	0	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	654	918	747	696	-	1456	-	-	1497	-	-
Mov Cap-2 Maneuver	-	654	-	747	696	-	-	-	-	-	-	-
Stage 1	-	788	-	951	844	-	-	-	-	-	-	-
Stage 2	-	802	-	855	785	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB			
HCM Control Delay, s	9.6		10.1		0.3		0			
HCM LOS	A		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1456	-	-	797	747	1497	-	-
HCM Lane V/C Ratio	0.003	-	-	0.013	0.048	-	-	-
HCM Control Delay (s)	7.5	0	-	9.6	10.1	0	-	-
HCM Lane LOS	A	A	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

HCM 6th AWSC

9: E Main Avenue (OR 104)/NE Skipanon Drive & Fort Stevens Highway/E Harbor Drive 08/11/2023

Intersection	
Intersection Delay, s/veh	25.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↶	↷		↶	↷
Traffic Vol, veh/h	1	239	103	275	301	40	108	30	228	72	42	2
Future Vol, veh/h	1	239	103	275	301	40	108	30	228	72	42	2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	0	0	0	2	1	5	0	4	1	0	0	0
Mvmt Flow	1	266	114	306	334	44	120	33	253	80	47	2
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	34.2	28.3	17.2	16
HCM LOS	D	D	C	C

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	78%	0%	100%	0%	100%	0%	63%	0%
Vol Thru, %	22%	0%	0%	70%	0%	88%	37%	0%
Vol Right, %	0%	100%	0%	30%	0%	12%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	138	228	1	342	275	341	114	2
LT Vol	108	0	1	0	275	0	72	0
Through Vol	30	0	0	239	0	301	42	0
RT Vol	0	228	0	103	0	40	0	2
Lane Flow Rate	153	253	1	380	306	379	127	2
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.36	0.52	0.003	0.799	0.672	0.768	0.32	0.005
Departure Headway (Hd)	8.45	7.393	8.297	7.565	7.912	7.297	9.085	8.028
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	425	486	430	479	455	493	394	444
Service Time	6.216	5.159	6.067	5.335	5.684	5.068	6.869	5.81
HCM Lane V/C Ratio	0.36	0.521	0.002	0.793	0.673	0.769	0.322	0.005
HCM Control Delay	15.9	18	11.1	34.3	25.5	30.5	16.1	10.9
HCM Lane LOS	C	C	B	D	D	D	C	B
HCM 95th-tile Q	1.6	2.9	0	7.4	4.9	6.7	1.4	0

Intersection

Intersection Delay, s/veh 10.1

Intersection LOS B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	201	5	11	189	49	1	4	5	25	1	14
Future Vol, veh/h	25	201	5	11	189	49	1	4	5	25	1	14
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles, %	0	0	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	34	272	7	15	255	66	1	5	7	34	1	19
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.2	10.2	8.3	8.7
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	11%	4%	62%
Vol Thru, %	40%	87%	76%	3%
Vol Right, %	50%	2%	20%	35%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	10	231	249	40
LT Vol	1	25	11	25
Through Vol	4	201	189	1
RT Vol	5	5	49	14
Lane Flow Rate	14	312	336	54
Geometry Grp	1	1	1	1
Degree of Util (X)	0.019	0.384	0.401	0.078
Departure Headway (Hd)	5.101	4.427	4.294	5.226
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	699	815	838	684
Service Time	3.151	2.449	2.316	3.271
HCM Lane V/C Ratio	0.02	0.383	0.401	0.079
HCM Control Delay	8.3	10.2	10.2	8.7
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.1	1.8	1.9	0.3

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	102	0	71	0	0	4	32	163	0	1	203	53
Future Vol, veh/h	102	0	71	0	0	4	32	163	0	1	203	53
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	0	0	4	0	0	0	0	5	0	0	3	0
Mvmt Flow	129	0	90	0	0	5	41	206	0	1	257	67

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	585	583	292	627	616	207	325	0	0	207	0	0
Stage 1	294	294	-	289	289	-	-	-	-	-	-	-
Stage 2	291	289	-	338	327	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.24	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.336	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	425	427	743	399	409	839	1246	-	-	1376	-	-
Stage 1	719	673	-	723	677	-	-	-	-	-	-	-
Stage 2	721	677	-	681	651	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	410	410	742	340	393	838	1245	-	-	1375	-	-
Mov Cap-2 Maneuver	410	410	-	340	393	-	-	-	-	-	-	-
Stage 1	692	672	-	696	651	-	-	-	-	-	-	-
Stage 2	690	651	-	598	650	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.6	9.3	1.3	0
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1245	-	-	502	838	1375	-
HCM Lane V/C Ratio	0.033	-	-	0.436	0.006	0.001	-
HCM Control Delay (s)	8	0	-	17.6	9.3	7.6	0
HCM Lane LOS	A	A	-	C	A	A	A
HCM 95th %tile Q(veh)	0.1	-	-	2.2	0	0	-

Intersection						
Int Delay, s/veh	18.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	143	289	146	132	214	101
Future Vol, veh/h	143	289	146	132	214	101
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	125	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	164	332	168	152	246	116

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	852	244	0	0	320
Stage 1	244	-	-	-	-
Stage 2	608	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	333	800	-	-	1251
Stage 1	801	-	-	-	-
Stage 2	547	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	267	800	-	-	1251
Mov Cap-2 Maneuver	362	-	-	-	-
Stage 1	801	-	-	-	-
Stage 2	439	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	39.7	0	5.8
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	571	1251
HCM Lane V/C Ratio	-	-	0.87	0.197
HCM Control Delay (s)	-	-	39.7	8.6
HCM Lane LOS	-	-	E	A
HCM 95th %tile Q(veh)	-	-	9.8	0.7

Intersection						
Int Delay, s/veh	4.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	118	50	45	143	97	124
Future Vol, veh/h	118	50	45	143	97	124
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	148	63	56	179	121	155

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	490	199	276	0	0
Stage 1	199	-	-	-	-
Stage 2	291	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	541	847	1299	-	-
Stage 1	839	-	-	-	-
Stage 2	763	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	515	847	1299	-	-
Mov Cap-2 Maneuver	591	-	-	-	-
Stage 1	799	-	-	-	-
Stage 2	763	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.1	1.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1299	-	591	847	-	-
HCM Lane V/C Ratio	0.043	-	0.25	0.074	-	-
HCM Control Delay (s)	7.9	0	13.1	9.6	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	1	0.2	-	-

HCM Signalized Intersection Capacity Analysis

14: US 101 & E Harbor Drive

08/11/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	378	35	35	700	626	404
Future Volume (vph)	378	35	35	700	626	404
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.5	4.5	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1646	1488	1662	1733	1733	1458
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1646	1488	1662	1733	1733	1458
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	390	36	36	722	645	416
RTOR Reduction (vph)	0	25	0	0	0	89
Lane Group Flow (vph)	390	11	36	722	645	327
Heavy Vehicles (%)	1%	0%	0%	1%	1%	2%
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	8		1	6	2	8
Permitted Phases		8				2
Actuated Green, G (s)	21.5	21.5	2.7	41.3	34.6	56.1
Effective Green, g (s)	21.5	21.5	2.7	41.3	34.6	56.1
Actuated g/C Ratio	0.30	0.30	0.04	0.58	0.49	0.79
Clearance Time (s)	4.0	4.0	4.0	4.5	4.5	4.0
Vehicle Extension (s)	2.5	2.5	2.5	6.2	6.2	2.5
Lane Grp Cap (vph)	496	448	62	1003	840	1147
v/s Ratio Prot	c0.24		0.02	c0.42	0.37	0.09
v/s Ratio Perm		0.01				0.14
v/c Ratio	0.79	0.02	0.58	0.72	0.77	0.29
Uniform Delay, d1	22.8	17.5	33.7	10.8	15.1	2.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.8	0.0	10.9	3.7	5.6	0.1
Delay (s)	30.6	17.5	44.7	14.5	20.6	2.2
Level of Service	C	B	D	B	C	A
Approach Delay (s)	29.5			16.0	13.4	
Approach LOS	C			B	B	

Intersection Summary

HCM 2000 Control Delay	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	71.3	Sum of lost time (s)	12.5
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Signalized Intersection Summary

14: US 101 & E Harbor Drive

08/11/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	378	35	35	700	626	404
Future Volume (veh/h)	378	35	35	700	626	404
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1736	1750	1750	1736	1736	1723
Adj Flow Rate, veh/h	390	21	36	722	645	328
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	0	0	1	1	2
Cap, veh/h	445	399	59	1066	908	1156
Arrive On Green	0.27	0.27	0.04	0.61	0.52	0.52
Sat Flow, veh/h	1654	1483	1667	1736	1736	1460
Grp Volume(v), veh/h	390	21	36	722	645	328
Grp Sat Flow(s),veh/h/ln	1654	1483	1667	1736	1736	1460
Q Serve(g_s), s	16.3	0.8	1.5	19.9	20.4	4.4
Cycle Q Clear(g_c), s	16.3	0.8	1.5	19.9	20.4	4.4
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	445	399	59	1066	908	1156
V/C Ratio(X)	0.88	0.05	0.61	0.68	0.71	0.28
Avail Cap(c_a), veh/h	640	574	127	1284	1056	1280
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.3	19.6	34.4	9.2	13.1	2.0
Incr Delay (d2), s/veh	8.6	0.0	7.2	3.1	4.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	0.2	0.7	6.1	7.3	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.9	19.7	41.6	12.4	17.4	2.6
LnGrp LOS	C	B	D	B	B	A
Approach Vol, veh/h	411			758	973	
Approach Delay, s/veh	33.2			13.7	12.4	
Approach LOS	C			B	B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	6.6	42.3			48.9	23.4
Change Period (Y+Rc), s	4.0	4.5			4.5	4.0
Max Green Setting (Gmax), s	5.5	44.0			53.5	28.0
Max Q Clear Time (g_c+I1), s	3.5	22.4			21.9	18.3
Green Ext Time (p_c), s	0.0	15.4			19.1	1.1

Intersection Summary

HCM 6th Ctrl Delay			16.9			
HCM 6th LOS			B			

HCM 6th TWSC
 15: Fort Stevens Highway Spur & SE Ensign Lane

08/11/2023

Intersection						
Int Delay, s/veh	7.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗		↑
Traffic Vol, veh/h	303	26	27	319	80	107
Future Vol, veh/h	303	26	27	319	80	107
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	175	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	1
Mvmt Flow	344	30	31	363	91	122

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	335	31	0	0	394
Stage 1	31	-	-	-	-
Stage 2	304	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	664	1049	-	-	1176
Stage 1	997	-	-	-	-
Stage 2	753	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	609	1049	-	-	1176
Mov Cap-2 Maneuver	609	-	-	-	-
Stage 1	997	-	-	-	-
Stage 2	691	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.5	0	3.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	609	1049	1176
HCM Lane V/C Ratio	-	-	0.565	0.028	0.077
HCM Control Delay (s)	-	-	18.3	8.5	8.3
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	3.5	0.1	0.3

HCM Signalized Intersection Capacity Analysis

16: OR 101 & SE Ensign Lane

08/11/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	227	288	145	115	269	84	60	353	240	187	422	67
Future Volume (vph)	227	288	145	115	269	84	60	353	240	187	422	67
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5		4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.5	
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1662	1651		3225	1750	1488	1662	3292	1449	1646	3246	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1662	1651		3225	1750	1488	1662	3292	1449	1646	3246	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	239	303	153	121	283	88	63	372	253	197	444	71
RTOR Reduction (vph)	0	15	0	0	0	52	0	0	177	0	11	0
Lane Group Flow (vph)	239	441	0	121	283	36	63	372	76	197	504	0
Confl. Peds. (#/hr)			8	8					1	1		1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	3	8		7	4	5	1	6	7	5	2	
Permitted Phases						4			6			
Actuated Green, G (s)	18.4	34.3		7.6	23.5	39.5	6.7	21.4	29.0	16.0	30.7	
Effective Green, g (s)	18.4	34.3		7.6	23.5	39.5	6.7	21.4	29.0	16.0	30.7	
Actuated g/C Ratio	0.19	0.36		0.08	0.24	0.41	0.07	0.22	0.30	0.17	0.32	
Clearance Time (s)	4.0	4.5		4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.5	
Vehicle Extension (s)	2.5	6.2		2.5	6.2	2.5	2.5	6.2	2.5	2.5	6.2	
Lane Grp Cap (vph)	317	588		254	427	610	115	731	436	273	1034	
v/s Ratio Prot	c0.14	c0.27		0.04	0.16	0.01	0.04	0.11	0.01	c0.12	c0.16	
v/s Ratio Perm						0.01			0.04			
v/c Ratio	0.75	0.75		0.48	0.66	0.06	0.55	0.51	0.17	0.72	0.49	
Uniform Delay, d1	36.8	27.2		42.4	32.8	17.2	43.3	32.8	24.8	38.0	26.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	9.3	7.1		1.0	6.2	0.0	4.2	1.7	0.1	8.5	1.1	
Delay (s)	46.1	34.3		43.5	39.0	17.2	47.5	34.5	25.0	46.6	27.5	
Level of Service	D	C		D	D	B	D	C	C	D	C	
Approach Delay (s)		38.4			36.2			32.2			32.8	
Approach LOS		D			D			C			C	

Intersection Summary

HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	96.3	Sum of lost time (s)	17.0
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Signalized Intersection Summary
16: OR 101 & SE Ensign Lane

08/11/2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	227	288	145	115	269	84	60	353	240	187	422	67
Future Volume (veh/h)	227	288	145	115	269	84	60	353	240	187	422	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1750	1750	1750	1750	1750	1750	1750	1736	1736	1736	1750	1750
Adj Flow Rate, veh/h	239	303	137	121	283	46	63	372	137	197	444	60
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	0	1	1	1	0	0
Cap, veh/h	285	399	180	190	417	563	79	780	434	238	980	132
Arrive On Green	0.17	0.35	0.35	0.06	0.24	0.24	0.05	0.24	0.24	0.14	0.33	0.33
Sat Flow, veh/h	1667	1138	515	3233	1750	1468	1667	3299	1468	1654	2945	396
Grp Volume(v), veh/h	239	0	440	121	283	46	63	372	137	197	250	254
Grp Sat Flow(s),veh/h/ln	1667	0	1653	1617	1750	1468	1667	1650	1468	1654	1663	1678
Q Serve(g_s), s	11.2	0.0	19.0	3.0	11.9	1.6	3.0	7.8	5.9	9.4	9.5	9.6
Cycle Q Clear(g_c), s	11.2	0.0	19.0	3.0	11.9	1.6	3.0	7.8	5.9	9.4	9.5	9.6
Prop In Lane	1.00		0.31	1.00		1.00	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	285	0	579	190	417	563	79	780	434	238	553	558
V/C Ratio(X)	0.84	0.00	0.76	0.64	0.68	0.08	0.80	0.48	0.32	0.83	0.45	0.46
Avail Cap(c_a), veh/h	475	0	890	360	639	750	206	1246	641	410	834	842
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.4	0.0	23.2	37.2	28.0	15.9	38.1	26.5	22.1	33.6	21.2	21.2
Incr Delay (d2), s/veh	5.1	0.0	8.1	2.6	7.6	0.3	12.5	1.8	1.7	5.5	2.3	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	0.0	8.4	1.2	5.6	0.6	1.4	3.0	0.2	3.9	3.7	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.5	0.0	31.3	39.8	35.6	16.2	50.6	28.4	23.8	39.1	23.5	23.5
LnGrp LOS	D	A	C	D	D	B	D	C	C	D	C	C
Approach Vol, veh/h		679			450			572			701	
Approach Delay, s/veh		33.5			34.7			29.7			27.9	
Approach LOS		C			C			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	7.8	31.4	17.8	23.7	15.6	23.6	8.8	32.8				
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5				
Max Green Setting (Gmax), s	10.0	40.5	23.0	29.5	20.0	30.5	9.0	43.5				
Max Q Clear Time (g_c+I1), s	5.0	11.6	13.2	13.9	11.4	9.8	5.0	21.0				
Green Ext Time (p_c), s	0.0	11.1	0.7	3.4	0.4	9.0	0.1	6.5				

Intersection Summary

HCM 6th Ctrl Delay	31.2
HCM 6th LOS	C

Notes

User approved changes to right turn type.

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	24	17	91	3	9	8	15	85	11	21	1
Future Vol, veh/h	1	24	17	91	3	9	8	15	85	11	21	1
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles, %	0	5	0	3	0	0	0	0	4	0	0	0
Mvmt Flow	1	28	20	107	4	11	9	18	100	13	25	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.4	8.3	7.5	7.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	7%	2%	88%	33%
Vol Thru, %	14%	57%	3%	64%
Vol Right, %	79%	40%	9%	3%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	108	42	103	33
LT Vol	8	1	91	11
Through Vol	15	24	3	21
RT Vol	85	17	9	1
Lane Flow Rate	127	49	121	39
Geometry Grp	1	1	1	1
Degree of Util (X)	0.137	0.057	0.148	0.048
Departure Headway (Hd)	3.879	4.155	4.403	4.466
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	930	867	805	806
Service Time	1.881	2.155	2.486	2.472
HCM Lane V/C Ratio	0.137	0.057	0.15	0.048
HCM Control Delay	7.5	7.4	8.3	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.2	0.5	0.2

HCM 6th TWSC
2: NW Ridge Road & Peter Iredale Road

08/11/2023

Intersection												
Int Delay, s/veh	2.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕			↕	
Traffic Vol, veh/h	10	3	14	19	3	8	20	79	5	3	151	6
Future Vol, veh/h	10	3	14	19	3	8	20	79	5	3	151	6
Conflicting Peds, #/hr	1	0	0	0	0	1	1	0	2	2	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	25	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	9	0	0	0	0	3	0	0	0	0
Mvmt Flow	11	3	16	21	3	9	22	88	6	3	168	7

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	322	320	174	324	320	94	177	0	0	96	0	0
Stage 1	180	180	-	137	137	-	-	-	-	-	-	-
Stage 2	142	140	-	187	183	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.29	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.381	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	635	600	852	633	600	968	1411	-	-	1510	-	-
Stage 1	826	754	-	871	787	-	-	-	-	-	-	-
Stage 2	866	785	-	819	752	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	616	587	850	609	587	965	1408	-	-	1507	-	-
Mov Cap-2 Maneuver	616	587	-	609	587	-	-	-	-	-	-	-
Stage 1	811	751	-	855	773	-	-	-	-	-	-	-
Stage 2	840	771	-	799	749	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.2		10.6		1.5		0.1	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1408	-	-	609	850	673	1507	-	-
HCM Lane V/C Ratio	0.016	-	-	0.024	0.018	0.05	0.002	-	-
HCM Control Delay (s)	7.6	0	-	11.1	9.3	10.6	7.4	0	-
HCM Lane LOS	A	A	-	B	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.2	0	-	-

HCM 6th TWSC
3: NW Ridge Road & North Site Access

08/11/2023

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	37	12	92	61	20	164
Future Vol, veh/h	37	12	92	61	20	164
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	0	0	1
Mvmt Flow	41	13	102	68	22	182

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	362	136	0	0	170
Stage 1	136	-	-	-	-
Stage 2	226	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	641	918	-	-	1420
Stage 1	895	-	-	-	-
Stage 2	816	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	630	918	-	-	1420
Mov Cap-2 Maneuver	630	-	-	-	-
Stage 1	895	-	-	-	-
Stage 2	802	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	0.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	682	1420
HCM Lane V/C Ratio	-	-	0.08	0.016
HCM Control Delay (s)	-	-	10.7	7.6
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0

HCM 6th TWSC
4: NW Ridge Road & Main Site Access

08/11/2023

Intersection						
Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	24	12	141	41	20	181
Future Vol, veh/h	24	12	141	41	20	181
Conflicting Peds, #/hr	0	1	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	0	0	1
Mvmt Flow	27	13	157	46	22	201

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	425	181	0	0	203
Stage 1	180	-	-	-	-
Stage 2	245	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	590	867	-	-	1381
Stage 1	856	-	-	-	-
Stage 2	800	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	579	866	-	-	1381
Mov Cap-2 Maneuver	579	-	-	-	-
Stage 1	856	-	-	-	-
Stage 2	786	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	0.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	651	1381
HCM Lane V/C Ratio	-	-	0.061	0.016
HCM Control Delay (s)	-	-	10.9	7.6
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

HCM 6th TWSC
5: NW Ridge Road & South Site Access

08/11/2023

Intersection						
Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	24	12	170	41	21	184
Future Vol, veh/h	24	12	170	41	21	184
Conflicting Peds, #/hr	0	2	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	2	0	0	1
Mvmt Flow	27	13	189	46	23	204

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	462	214	0	0	235
Stage 1	212	-	-	-	-
Stage 2	250	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	562	831	-	-	1344
Stage 1	828	-	-	-	-
Stage 2	796	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	551	829	-	-	1344
Mov Cap-2 Maneuver	551	-	-	-	-
Stage 1	828	-	-	-	-
Stage 2	781	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.2	0	0.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	620	1344
HCM Lane V/C Ratio	-	-	0.065	0.017
HCM Control Delay (s)	-	-	11.2	7.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1

HCM 6th TWSC
6: NW Ridge Road & SW 9th Street

08/11/2023

Intersection						
Int Delay, s/veh	5.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	196	287	13	191	224
Future Vol, veh/h	5	196	287	13	191	224
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	7	261	383	17	255	299

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1201	392	0	0	400
Stage 1	392	-	-	-	-
Stage 2	809	-	-	-	-
Critical Hdwy	6.4	6.21	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.309	-	-	2.2
Pot Cap-1 Maneuver	206	659	-	-	1170
Stage 1	687	-	-	-	-
Stage 2	441	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	152	659	-	-	1170
Mov Cap-2 Maneuver	152	-	-	-	-
Stage 1	687	-	-	-	-
Stage 2	326	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.5	0	4.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	609	1170
HCM Lane V/C Ratio	-	-	0.44	0.218
HCM Control Delay (s)	-	-	15.5	8.9
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	2.2	0.8

HCM 6th TWSC
 7: 18th Street/NW Ridge Road & Delaura Beach Lane

08/11/2023

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	31	32	6	90	103	1
Future Vol, veh/h	31	32	6	90	103	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	0	0	0	3	0	0
Mvmt Flow	40	41	8	115	132	1

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	264	133	133	0	-	0
Stage 1	133	-	-	-	-	-
Stage 2	131	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	729	922	1464	-	-	-
Stage 1	898	-	-	-	-	-
Stage 2	900	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	725	922	1464	-	-	-
Mov Cap-2 Maneuver	725	-	-	-	-	-
Stage 1	893	-	-	-	-	-
Stage 2	900	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	0.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1464	-	813	-	-
HCM Lane V/C Ratio	0.005	-	0.099	-	-
HCM Control Delay (s)	7.5	0	9.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

HCM 6th TWSC
 8: NW Ridge Road & Delaura Beach Lane

08/11/2023

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↻			↻			↻			↻	
Traffic Vol, veh/h	0	3	1	8	0	0	0	0	60	0	93	1
Future Vol, veh/h	0	3	1	8	0	0	0	0	60	0	93	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	66	66	66	66	66	66	66	66	66	66	66	66
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	2	0
Mvmt Flow	0	5	2	12	0	0	0	0	91	0	141	2

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	233	142	192	189	-	143	0	0	91	0	0
Stage 1	-	142	-	46	46	-	-	-	-	-	-	-
Stage 2	-	91	-	146	143	-	-	-	-	-	-	-
Critical Hdwy	-	6.5	6.2	7.1	6.5	-	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	-	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	-	4	3.3	3.5	4	-	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	0	671	911	772	709	0	1452	-	-	1517	-	-
Stage 1	0	783	-	973	861	0	-	-	-	-	-	-
Stage 2	0	823	-	861	782	0	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	-	671	911	767	709	-	1452	-	-	1517	-	-
Mov Cap-2 Maneuver	-	671	-	767	709	-	-	-	-	-	-	-
Stage 1	-	783	-	973	861	-	-	-	-	-	-	-
Stage 2	-	823	-	855	782	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB		
HCM Control Delay, s	10.1		9.8		0		0		
HCM LOS	B		A						

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1452	-	-	718	767	1517	-	-
HCM Lane V/C Ratio	-	-	-	0.008	0.016	-	-	-
HCM Control Delay (s)	0	-	-	10.1	9.8	0	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

HCM 6th AWSC

9: E Main Avenue (OR 104)/NE Skipanon Drive & Fort Stevens Highway/E Harbor Drive 08/11/2023

Intersection	
Intersection Delay, s/veh	16
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↶	↷		↶	↷
Traffic Vol, veh/h	4	246	79	140	126	23	43	24	190	41	25	0
Future Vol, veh/h	4	246	79	140	126	23	43	24	190	41	25	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	25	4	1	1	8	29	5	32	1	50	22	0
Mvmt Flow	5	293	94	167	150	27	51	29	226	49	30	0
Number of Lanes	1	1	0	1	1	0	0	1	1	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	21.3	12.8	13.6	13.3
HCM LOS	C	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	64%	0%	100%	0%	100%	0%	62%	0%
Vol Thru, %	36%	0%	0%	76%	0%	85%	38%	100%
Vol Right, %	0%	100%	0%	24%	0%	15%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	67	190	4	325	140	149	66	0
LT Vol	43	0	4	0	140	0	41	0
Through Vol	24	0	0	246	0	126	25	0
RT Vol	0	190	0	79	0	23	0	0
Lane Flow Rate	80	226	5	387	167	177	79	0
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.161	0.42	0.01	0.677	0.324	0.32	0.189	0
Departure Headway (Hd)	7.262	6.689	7.343	6.297	7.002	6.503	8.642	7.834
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	491	534	485	569	510	548	418	0
Service Time	5.056	4.483	5.129	4.083	4.799	4.3	6.342	5.534
HCM Lane V/C Ratio	0.163	0.423	0.01	0.68	0.327	0.323	0.189	0
HCM Control Delay	11.5	14.3	10.2	21.4	13.2	12.4	13.3	10.5
HCM Lane LOS	B	B	B	C	B	B	B	N
HCM 95th-tile Q	0.6	2.1	0	5.1	1.4	1.4	0.7	0

Intersection

Intersection Delay, s/veh 8.7
 Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	21	145	3	0	125	23	0	1	4	29	0	13
Future Vol, veh/h	21	145	3	0	125	23	0	1	4	29	0	13
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	6	0	0	0	0	0	0	0	0	9	0	0
Mvmt Flow	28	191	4	0	164	30	0	1	5	38	0	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9	8.4	7.5	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	0%	12%	0%	69%
Vol Thru, %	20%	86%	84%	0%
Vol Right, %	80%	2%	16%	31%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	5	169	148	42
LT Vol	0	21	0	29
Through Vol	1	145	125	0
RT Vol	4	3	23	13
Lane Flow Rate	7	222	195	55
Geometry Grp	1	1	1	1
Degree of Util (X)	0.008	0.27	0.227	0.076
Departure Headway (Hd)	4.405	4.378	4.192	4.925
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	812	825	859	728
Service Time	2.432	2.378	2.205	2.947
HCM Lane V/C Ratio	0.009	0.269	0.227	0.076
HCM Control Delay	7.5	9	8.4	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	1.1	0.9	0.2

HCM 6th TWSC
 11: E Main Avenue (OR 104) & SW 9th Street/SE 9th Street

08/11/2023

Intersection												
Int Delay, s/veh	12.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	105	3	77	0	3	2	131	303	2	7	237	158
Future Vol, veh/h	105	3	77	0	3	2	131	303	2	7	237	158
Conflicting Peds, #/hr	0	0	0	0	0	0	1	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
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, %	0	0	0	0	0	0	0	1	0	0	0	2
Mvmt Flow	122	3	90	0	3	2	152	352	2	8	276	184

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1045	1043	369	1088	1134	353	461	0	0	354	0	0
Stage 1	385	385	-	657	657	-	-	-	-	-	-	-
Stage 2	660	658	-	431	477	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	209	231	681	195	204	695	1111	-	-	1216	-	-
Stage 1	642	614	-	457	465	-	-	-	-	-	-	-
Stage 2	455	464	-	607	559	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	177	190	680	144	167	695	1110	-	-	1216	-	-
Mov Cap-2 Maneuver	177	190	-	144	167	-	-	-	-	-	-	-
Stage 1	532	608	-	379	385	-	-	-	-	-	-	-
Stage 2	373	385	-	519	553	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	64.4		20.4		2.6		0.1	
HCM LOS	F		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1110	-	-	256	240	1216	-
HCM Lane V/C Ratio	0.137	-	-	0.84	0.024	0.007	-
HCM Control Delay (s)	8.8	0	-	64.4	20.4	8	0
HCM Lane LOS	A	A	-	F	C	A	A
HCM 95th %tile Q(veh)	0.5	-	-	6.8	0.1	0	-

Intersection						
Int Delay, s/veh	6.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	88	119	75	109	168	120
Future Vol, veh/h	88	119	75	109	168	120
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	125	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	3	1	12	0	1	5
Mvmt Flow	109	147	93	135	207	148

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	723	161	0	0	228
Stage 1	161	-	-	-	-
Stage 2	562	-	-	-	-
Critical Hdwy	6.43	6.21	-	-	4.11
Critical Hdwy Stg 1	5.43	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-
Follow-up Hdwy	3.527	3.309	-	-	2.209
Pot Cap-1 Maneuver	392	887	-	-	1346
Stage 1	865	-	-	-	-
Stage 2	569	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	332	887	-	-	1346
Mov Cap-2 Maneuver	409	-	-	-	-
Stage 1	865	-	-	-	-
Stage 2	481	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.6	0	4.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	593	1346
HCM Lane V/C Ratio	-	-	0.431	0.154
HCM Control Delay (s)	-	-	15.6	8.2
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	2.2	0.5

Intersection						
Int Delay, s/veh	3.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	102	18	16	73	118	73
Future Vol, veh/h	102	18	16	73	118	73
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	50	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	0	0	0	9	3	0
Mvmt Flow	132	23	21	95	153	95

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	338	201	248	0	0
Stage 1	201	-	-	-	-
Stage 2	137	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-
Pot Cap-1 Maneuver	662	845	1330	-	-
Stage 1	838	-	-	-	-
Stage 2	895	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	651	845	1330	-	-
Mov Cap-2 Maneuver	687	-	-	-	-
Stage 1	824	-	-	-	-
Stage 2	895	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.2	1.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1330	-	687	845	-	-
HCM Lane V/C Ratio	0.016	-	0.193	0.028	-	-
HCM Control Delay (s)	7.8	0	11.5	9.4	-	-
HCM Lane LOS	A	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.7	0.1	-	-

HCM Signalized Intersection Capacity Analysis

14: US 101 & E Harbor Drive

08/11/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	277	10	15	417	419	273
Future Volume (vph)	277	10	15	417	419	273
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.0	4.0	4.5	4.5	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1525	1488	1662	1699	1716	1403
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	1525	1488	1662	1699	1716	1403
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	311	11	17	469	471	307
RTOR Reduction (vph)	0	7	0	0	0	75
Lane Group Flow (vph)	311	4	17	469	471	232
Heavy Vehicles (%)	9%	0%	0%	3%	2%	6%
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	8		1	6	2	8
Permitted Phases		8				2
Actuated Green, G (s)	17.2	17.2	0.6	27.7	23.1	40.3
Effective Green, g (s)	17.2	17.2	0.6	27.7	23.1	40.3
Actuated g/C Ratio	0.32	0.32	0.01	0.52	0.43	0.75
Clearance Time (s)	4.0	4.0	4.0	4.5	4.5	4.0
Vehicle Extension (s)	2.5	2.5	2.5	6.2	6.2	2.5
Lane Grp Cap (vph)	491	479	18	881	742	1058
v/s Ratio Prot	c0.20		0.01	c0.28	c0.27	0.07
v/s Ratio Perm		0.00				0.09
v/c Ratio	0.63	0.01	0.94	0.53	0.63	0.22
Uniform Delay, d1	15.4	12.3	26.4	8.5	11.9	1.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	0.0	183.9	1.5	3.1	0.1
Delay (s)	17.8	12.3	210.3	10.1	14.9	2.0
Level of Service	B	B	F	B	B	A
Approach Delay (s)	17.6			17.1	9.8	
Approach LOS	B			B	A	

Intersection Summary

HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	53.4	Sum of lost time (s)	12.5
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Signalized Intersection Summary
 14: US 101 & E Harbor Drive

08/11/2023



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↶	↷	↶	↷	↷	↶
Traffic Volume (veh/h)	277	10	15	417	419	273
Future Volume (veh/h)	277	10	15	417	419	273
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1627	1750	1750	1709	1723	1668
Adj Flow Rate, veh/h	311	5	17	469	471	245
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	9	0	0	3	2	6
Cap, veh/h	381	365	35	1012	853	1047
Arrive On Green	0.25	0.25	0.02	0.59	0.50	0.50
Sat Flow, veh/h	1550	1483	1667	1709	1723	1414
Grp Volume(v), veh/h	311	5	17	469	471	245
Grp Sat Flow(s),veh/h/ln	1550	1483	1667	1709	1723	1414
Q Serve(g_s), s	9.9	0.1	0.5	8.1	10.0	2.9
Cycle Q Clear(g_c), s	9.9	0.1	0.5	8.1	10.0	2.9
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	381	365	35	1012	853	1047
V/C Ratio(X)	0.82	0.01	0.49	0.46	0.55	0.23
Avail Cap(c_a), veh/h	915	876	175	1644	1345	1451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.7	15.0	25.4	6.0	9.2	2.1
Incr Delay (d2), s/veh	3.2	0.0	7.6	1.3	2.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.3	1.9	3.0	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	21.9	15.0	33.1	7.4	11.5	2.6
LnGrp LOS	C	B	C	A	B	A
Approach Vol, veh/h	316			486	716	
Approach Delay, s/veh	21.8			8.3	8.4	
Approach LOS	C			A	A	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	5.1	30.5			35.6	16.9
Change Period (Y+Rc), s	4.0	4.5			4.5	4.0
Max Green Setting (Gmax), s	5.5	41.0			50.5	31.0
Max Q Clear Time (g_c+I1), s	2.5	12.0			10.1	11.9
Green Ext Time (p_c), s	0.0	14.0			13.0	1.1
Intersection Summary						
HCM 6th Ctrl Delay			11.2			
HCM 6th LOS			B			

HCM 6th TWSC
 15: Fort Stevens Highway Spur & SE Ensign Lane

08/11/2023

Intersection						
Int Delay, s/veh	4.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗		↑
Traffic Vol, veh/h	160	14	18	247	45	62
Future Vol, veh/h	160	14	18	247	45	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	75	0	-	175	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	0	0	0	1	0	4
Mvmt Flow	184	16	21	284	52	71
























Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	196	21	0	0	305
Stage 1	21	-	-	-	-
Stage 2	175	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	797	1062	-	-	1267
Stage 1	1007	-	-	-	-
Stage 2	860	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	763	1062	-	-	1267
Mov Cap-2 Maneuver	763	-	-	-	-
Stage 1	1007	-	-	-	-
Stage 2	823	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	3.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	763	1062	1267
HCM Lane V/C Ratio	-	-	0.241	0.015	0.041
HCM Control Delay (s)	-	-	11.2	8.4	8
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0	0.1

HCM Signalized Intersection Capacity Analysis
 16: OR 101 & SE Ensign Lane

08/11/2023

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	124	133	66	64	164	213	53	289	110	78	236	36	
Future Volume (vph)	124	133	66	64	164	213	53	289	110	78	236	36	
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	
Total Lost time (s)	4.0	4.5		4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.5		
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95		
Frbp, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Satd. Flow (prot)	1630	1624		3225	1733	1473	1630	3260	1458	1646	3104		
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		
Satd. Flow (perm)	1630	1624		3225	1733	1473	1630	3260	1458	1646	3104		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Adj. Flow (vph)	132	141	70	68	174	227	56	307	117	83	251	38	
RTOR Reduction (vph)	0	17	0	0	0	145	0	0	77	0	10	0	
Lane Group Flow (vph)	132	194	0	68	174	82	56	307	40	83	279	0	
Confl. Bikes (#/hr)			1										
Heavy Vehicles (%)	2%	0%	6%	0%	1%	1%	2%	2%	2%	1%	5%	5%	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA		
Protected Phases	3	8		7	4	5	1	6	7	5	2		
Permitted Phases						4			6				
Actuated Green, G (s)	11.4	22.5		6.3	17.4	26.5	4.9	18.6	24.9	9.1	22.8		
Effective Green, g (s)	11.4	22.5		6.3	17.4	26.5	4.9	18.6	24.9	9.1	22.8		
Actuated g/C Ratio	0.16	0.31		0.09	0.24	0.36	0.07	0.25	0.34	0.12	0.31		
Clearance Time (s)	4.0	4.5		4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.5		
Vehicle Extension (s)	2.5	6.2		2.5	6.2	2.5	2.5	6.2	2.5	2.5	6.2		
Lane Grp Cap (vph)	252	497		276	410	531	108	824	493	203	962		
v/s Ratio Prot	c0.08	c0.12		0.02	0.10	0.02	0.03	c0.09	0.01	c0.05	0.09		
v/s Ratio Perm						0.04			0.02				
v/c Ratio	0.52	0.39		0.25	0.42	0.15	0.52	0.37	0.08	0.41	0.29		
Uniform Delay, d1	28.6	20.1		31.4	23.8	15.9	33.2	22.6	16.5	29.7	19.2		
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2	1.5	1.5		0.3	2.1	0.1	3.1	0.8	0.1	1.0	0.5		
Delay (s)	30.1	21.6		31.7	25.9	16.0	36.3	23.5	16.6	30.7	19.7		
Level of Service	C	C		C	C	B	D	C	B	C	B		
Approach Delay (s)		24.9			22.0			23.3			22.2		
Approach LOS		C			C			C			C		
Intersection Summary													
HCM 2000 Control Delay			23.0		HCM 2000 Level of Service				C				
HCM 2000 Volume to Capacity ratio			0.43										
Actuated Cycle Length (s)			73.5		Sum of lost time (s)				17.0				
Intersection Capacity Utilization			44.4%		ICU Level of Service				A				
Analysis Period (min)			15										

c Critical Lane Group

HCM 6th Signalized Intersection Summary
 16: OR 101 & SE Ensign Lane

08/11/2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	133	66	64	164	213	53	289	110	78	236	36
Future Volume (veh/h)	124	133	66	64	164	213	53	289	110	78	236	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1750	1668	1750	1736	1736	1723	1723	1723	1736	1682	1682
Adj Flow Rate, veh/h	132	141	49	68	174	126	56	307	64	83	251	27
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	0	6	0	1	1	2	2	2	1	5	5
Cap, veh/h	174	306	106	199	353	400	89	909	495	114	851	91
Arrive On Green	0.11	0.25	0.25	0.06	0.20	0.20	0.05	0.28	0.28	0.07	0.29	0.29
Sat Flow, veh/h	1641	1236	430	3233	1736	1471	1641	3273	1460	1654	2913	310
Grp Volume(v), veh/h	132	0	190	68	174	126	56	307	64	83	137	141
Grp Sat Flow(s),veh/h/ln	1641	0	1666	1617	1736	1471	1641	1637	1460	1654	1598	1626
Q Serve(g_s), s	3.9	0.0	4.8	1.0	4.4	3.4	1.7	3.7	1.5	2.4	3.3	3.3
Cycle Q Clear(g_c), s	3.9	0.0	4.8	1.0	4.4	3.4	1.7	3.7	1.5	2.4	3.3	3.3
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		0.19
Lane Grp Cap(c), veh/h	174	0	413	199	353	400	89	909	495	114	467	475
V/C Ratio(X)	0.76	0.00	0.46	0.34	0.49	0.31	0.63	0.34	0.13	0.73	0.29	0.30
Avail Cap(c_a), veh/h	698	0	1501	589	1143	1070	399	2287	1110	502	1213	1235
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.5	0.0	15.8	22.2	17.4	14.3	22.9	14.2	11.3	22.5	13.5	13.5
Incr Delay (d2), s/veh	5.0	0.0	3.2	0.8	4.3	1.8	5.3	0.9	0.5	6.5	1.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.0	2.0	0.4	1.9	1.2	0.7	1.2	0.5	1.0	1.1	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.5	0.0	19.0	23.0	21.7	16.1	28.2	15.1	11.8	29.0	14.9	15.0
LnGrp LOS	C	A	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		322			368			427			361	
Approach Delay, s/veh		22.1			20.0			16.3			18.2	
Approach LOS		C			C			B			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	6.7	18.9	9.2	14.5	7.4	18.2	7.0	16.7				
Change Period (Y+Rc), s	4.0	4.5	4.0	4.5	4.0	4.5	4.0	4.5				
Max Green Setting (Gmax), s	12.0	37.5	21.0	32.5	15.0	34.5	9.0	44.5				
Max Q Clear Time (g_c+I1), s	3.7	5.3	5.9	6.4	4.4	5.7	3.0	6.8				
Green Ext Time (p_c), s	0.1	6.1	0.4	3.7	0.1	8.0	0.1	2.9				

Intersection Summary		
HCM 6th Ctrl Delay		18.9
HCM 6th LOS		B

Notes

User approved changes to right turn type.

Intersection: 1: NW Ridge Road/Lake Drive & Pacific Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	49	115	63	40
Average Queue (ft)	28	54	36	21
95th Queue (ft)	46	88	58	47
Link Distance (ft)	479	2171	5451	1004
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: NW Ridge Road & Peter Iredale Road

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LTR	LTR	LTR
Maximum Queue (ft)	53	54	49	54	21
Average Queue (ft)	27	28	22	13	1
95th Queue (ft)	49	51	43	42	10
Link Distance (ft)	959		576	618	5451
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		25			
Storage Blk Time (%)	6	5			
Queuing Penalty (veh)	4	2			

Intersection: 3: NW Ridge Road & North Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 4: NW Ridge Road & Main Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 5: NW Ridge Road & South Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 6: NW Ridge Road & SW 9th Street

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	53	44
Average Queue (ft)	23	4
95th Queue (ft)	43	24
Link Distance (ft)	844	4599
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: 18th Street/NW Ridge Road & Delaura Beach Lane

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	51	48
Average Queue (ft)	21	3
95th Queue (ft)	36	22
Link Distance (ft)	23	1168
Upstream Blk Time (%)	6	
Queuing Penalty (veh)	4	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: NW Ridge Road & Delaura Beach Lane

Movement	EB	WB	NB
Directions Served	TR	LT	LTR
Maximum Queue (ft)	22	27	30
Average Queue (ft)	4	13	4
95th Queue (ft)	18	34	21
Link Distance (ft)	377	23	1273
Upstream Blk Time (%)		2	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: E Main Avenue (OR 104)/NE Skipanon Drive & Fort Stevens Highway/E Harbor Drive

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	TR	LT	R	LT
Maximum Queue (ft)	10	172	157	161	172	142	83
Average Queue (ft)	1	80	75	86	53	31	37
95th Queue (ft)	6	143	124	135	107	105	63
Link Distance (ft)		651		209	2514		565
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150		100			50	
Storage Blk Time (%)		1	2	3	4	1	2
Queuing Penalty (veh)		0	6	8	7	1	0

Intersection: 10: SW Cedar Drive/SW Cedar Avenue & SW 9th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	82	71	31	45
Average Queue (ft)	48	47	9	21
95th Queue (ft)	76	69	31	46
Link Distance (ft)	2209	615	211	673
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 11: E Main Avenue (OR 104) & SW 9th Street/SE 9th Street

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	93	31	51
Average Queue (ft)	44	4	6
95th Queue (ft)	75	21	30
Link Distance (ft)	306	337	897
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: E Main Avenue (OR 104) & Fort Stevens Highway Spur

Movement	WB	NB	SB
Directions Served	LR	TR	L
Maximum Queue (ft)	206	4	100
Average Queue (ft)	91	0	28
95th Queue (ft)	158	0	68
Link Distance (ft)	1146	1154	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			125
Storage Blk Time (%)			0
Queuing Penalty (veh)			0

Intersection: 13: E Main Avenue (OR 104) & SW 18th Street

Movement	EB	EB	NB
Directions Served	L	R	LT
Maximum Queue (ft)	48	37	52
Average Queue (ft)	13	19	10
95th Queue (ft)	31	34	36
Link Distance (ft)	1274		344
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		50	
Storage Blk Time (%)	0	0	
Queuing Penalty (veh)	0	0	

Intersection: 14: US 101 & E Harbor Drive

Movement	EB	EB	B49	B49	NB	NB	SB	SB
Directions Served	L	R	T	T	L	T	T	R
Maximum Queue (ft)	101	64	195	4	73	342	318	66
Average Queue (ft)	83	20	62	0	24	136	139	22
95th Queue (ft)	109	54	159	3	60	267	249	53
Link Distance (ft)	38	38	714	714		1882	603	
Upstream Blk Time (%)	40	2						
Queuing Penalty (veh)	92	4						
Storage Bay Dist (ft)					200			360
Storage Blk Time (%)						3	0	
Queuing Penalty (veh)						1	1	

Intersection: 15: Fort Stevens Highway Spur & SE Ensign Lane

Movement	WB	WB	NB	SB
Directions Served	L	R	R	LT
Maximum Queue (ft)	170	104	29	78
Average Queue (ft)	81	18	2	19
95th Queue (ft)	148	85	14	52
Link Distance (ft)		298		519
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	75		175	
Storage Blk Time (%)	10			
Queuing Penalty (veh)	3			

Intersection: 16: OR 101 & SE Ensign Lane

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	L	T	R	L	T	T	R	L	T
Maximum Queue (ft)	242	287	49	143	236	44	121	270	227	124	216	177
Average Queue (ft)	142	173	8	76	116	16	49	146	74	55	113	89
95th Queue (ft)	227	270	46	131	200	35	94	225	189	97	192	158
Link Distance (ft)		446		431	431			593	593			536
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	270		315			315	365			430	325	
Storage Blk Time (%)	0	1			0			0				
Queuing Penalty (veh)	0	2			0			0				

Intersection: 16: OR 101 & SE Ensign Lane

Movement	SB
Directions Served	TR
Maximum Queue (ft)	192
Average Queue (ft)	102
95th Queue (ft)	177
Link Distance (ft)	536
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 100: NW Ridge Road

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 136

Intersection: 1: NW Ridge Road/Lake Drive & Pacific Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	60	67	61	49
Average Queue (ft)	25	32	29	16
95th Queue (ft)	53	63	46	43
Link Distance (ft)	479	2171	5451	1004
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: NW Ridge Road & Peter Iredale Road

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LTR	LTR	LTR
Maximum Queue (ft)	31	55	39	22	5
Average Queue (ft)	13	15	17	1	0
95th Queue (ft)	37	42	38	9	4
Link Distance (ft)	959		576	618	5451
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		25			
Storage Blk Time (%)	1	1			
Queuing Penalty (veh)	0	0			

Intersection: 3: NW Ridge Road & North Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 4: NW Ridge Road & Main Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 5: NW Ridge Road & South Site Access

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 6: NW Ridge Road & SW 9th Street

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	62	4	75
Average Queue (ft)	27	0	22
95th Queue (ft)	48	3	57
Link Distance (ft)	844	3298	4599
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 7: 18th Street/NW Ridge Road & Delaura Beach Lane

Movement	EB
Directions Served	LR
Maximum Queue (ft)	23
Average Queue (ft)	14
95th Queue (ft)	28
Link Distance (ft)	23
Upstream Blk Time (%)	3
Queuing Penalty (veh)	1
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 8: NW Ridge Road & Delaura Beach Lane

Movement	EB	WB	NB
Directions Served	TR	LT	LTR
Maximum Queue (ft)	22	26	12
Average Queue (ft)	2	6	1
95th Queue (ft)	13	25	7
Link Distance (ft)	377	23	1273
Upstream Blk Time (%)		1	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: E Main Avenue (OR 104)/NE Skipanon Drive & Fort Stevens Highway/E Harbor Drive

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	TR	LT	R	LT
Maximum Queue (ft)	37	135	73	107	118	118	89
Average Queue (ft)	4	64	38	54	39	24	43
95th Queue (ft)	21	113	65	91	85	83	78
Link Distance (ft)		651		209	2514		565
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150		100			50	
Storage Blk Time (%)		0		0	1	0	3
Queuing Penalty (veh)		0		0	2	0	0

Intersection: 10: SW Cedar Drive/SW Cedar Avenue & SW 9th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	82	59	31	67
Average Queue (ft)	44	31	5	27
95th Queue (ft)	70	52	23	56
Link Distance (ft)	2209	615	211	673
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 11: E Main Avenue (OR 104) & SW 9th Street/SE 9th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	112	35	91	37
Average Queue (ft)	53	6	30	3
95th Queue (ft)	86	26	73	20
Link Distance (ft)	306	337	897	480
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: E Main Avenue (OR 104) & Fort Stevens Highway Spur

Movement	WB	NB	SB
Directions Served	LR	TR	L
Maximum Queue (ft)	99	9	70
Average Queue (ft)	43	0	25
95th Queue (ft)	71	5	59
Link Distance (ft)	1146	1154	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			125
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: E Main Avenue (OR 104) & SW 18th Street

Movement	EB	EB	NB
Directions Served	L	R	LT
Maximum Queue (ft)	39	25	29
Average Queue (ft)	12	10	3
95th Queue (ft)	28	28	18
Link Distance (ft)	1274		344
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		50	
Storage Blk Time (%)	0		
Queuing Penalty (veh)	0		

Intersection: 14: US 101 & E Harbor Drive

Movement	EB	EB	B49	B49	NB	NB	SB	SB
Directions Served	L	R	T	T	L	T	T	R
Maximum Queue (ft)	107	40	144	17	48	157	156	71
Average Queue (ft)	78	4	32	1	14	65	67	33
95th Queue (ft)	112	21	103	9	40	131	132	61
Link Distance (ft)	38	38	714	714		1882	603	
Upstream Blk Time (%)	25	0						
Queuing Penalty (veh)	53	0						
Storage Bay Dist (ft)					200		360	
Storage Blk Time (%)						0		
Queuing Penalty (veh)						0		

Intersection: 15: Fort Stevens Highway Spur & SE Ensign Lane

Movement	WB	WB	NB	SB
Directions Served	L	R	R	LT
Maximum Queue (ft)	66	17	4	38
Average Queue (ft)	32	6	0	10
95th Queue (ft)	57	19	5	33
Link Distance (ft)		298		519
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	75		175	
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Intersection: 16: OR 101 & SE Ensign Lane

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	L	T	R	L	T	T	R	L	T
Maximum Queue (ft)	154	147	16	87	111	63	89	195	140	65	114	110
Average Queue (ft)	70	72	1	38	48	26	34	92	21	29	42	44
95th Queue (ft)	121	127	9	71	95	51	73	160	81	57	85	91
Link Distance (ft)		446		431	431			593	593			536
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	270		315			315	365			430	325	
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 16: OR 101 & SE Ensign Lane

Movement	SB
Directions Served	TR
Maximum Queue (ft)	124
Average Queue (ft)	48
95th Queue (ft)	100
Link Distance (ft)	536
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 100: NW Ridge Road

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 57

Intersection: 1: NW Ridge Road/Lake Drive & Pacific Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	50	89	80	40
Average Queue (ft)	29	52	43	19
95th Queue (ft)	46	81	65	44
Link Distance (ft)	479	2171	5451	1004
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: NW Ridge Road & Peter Iredale Road

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LTR	LTR	LTR
Maximum Queue (ft)	54	57	52	66	43
Average Queue (ft)	28	27	22	12	4
95th Queue (ft)	50	49	43	44	23
Link Distance (ft)	959		576	618	5451
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		25			
Storage Blk Time (%)	6	5			
Queuing Penalty (veh)	4	2			

Intersection: 3: NW Ridge Road & North Site Access

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	57	11
Average Queue (ft)	29	1
95th Queue (ft)	49	7
Link Distance (ft)	319	618
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: NW Ridge Road & Main Site Access

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	62	21
Average Queue (ft)	29	1
95th Queue (ft)	53	11
Link Distance (ft)	566	1268
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: NW Ridge Road & South Site Access

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	56	26
Average Queue (ft)	25	1
95th Queue (ft)	47	11
Link Distance (ft)	682	2539
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: NW Ridge Road & SW 9th Street

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	73	70
Average Queue (ft)	26	11
95th Queue (ft)	50	44
Link Distance (ft)	844	4599
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: 18th Street/NW Ridge Road & Delaura Beach Lane

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	52	32	6
Average Queue (ft)	22	4	0
95th Queue (ft)	36	21	4
Link Distance (ft)	23	1168	321
Upstream Blk Time (%)	8		
Queuing Penalty (veh)	7		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 8: NW Ridge Road & Delaura Beach Lane

Movement	EB	WB	NB
Directions Served	TR	LT	LTR
Maximum Queue (ft)	23	27	37
Average Queue (ft)	6	16	4
95th Queue (ft)	21	37	22
Link Distance (ft)	377	23	1273
Upstream Blk Time (%)		2	
Queuing Penalty (veh)		1	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: E Main Avenue (OR 104)/NE Skipanon Drive & Fort Stevens Highway/E Harbor Drive

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	TR	LT	R	LT
Maximum Queue (ft)	15	244	179	173	154	138	68
Average Queue (ft)	1	95	93	93	52	42	36
95th Queue (ft)	8	177	152	148	107	118	60
Link Distance (ft)		651		209	2514		565
Upstream Blk Time (%)			0	0			
Queuing Penalty (veh)			0	0			
Storage Bay Dist (ft)	150		100			50	
Storage Blk Time (%)		3	4	5	4	1	2
Queuing Penalty (veh)		0	13	14	10	2	0

Intersection: 10: SW Cedar Drive/SW Cedar Avenue & SW 9th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	117	89	31	50
Average Queue (ft)	56	49	9	24
95th Queue (ft)	93	75	32	47
Link Distance (ft)	2209	615	211	673
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 11: E Main Avenue (OR 104) & SW 9th Street/SE 9th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	98	31	47	6
Average Queue (ft)	52	5	6	0
95th Queue (ft)	83	23	29	4
Link Distance (ft)	306	337	897	480
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: E Main Avenue (OR 104) & Fort Stevens Highway Spur

Movement	WB	NB	SB
Directions Served	LR	TR	L
Maximum Queue (ft)	276	13	80
Average Queue (ft)	110	1	31
95th Queue (ft)	212	6	66
Link Distance (ft)	1146	1154	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			125
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 13: E Main Avenue (OR 104) & SW 18th Street

Movement	EB	EB	NB	SB
Directions Served	L	R	LT	TR
Maximum Queue (ft)	64	42	50	4
Average Queue (ft)	18	19	10	0
95th Queue (ft)	43	36	38	3
Link Distance (ft)	1274		344	1154
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		50		
Storage Blk Time (%)	0	0		
Queuing Penalty (veh)	0	0		

Intersection: 14: US 101 & E Harbor Drive

Movement	EB	EB	B49	NB	NB	SB	SB
Directions Served	L	R	T	L	T	T	R
Maximum Queue (ft)	102	57	232	60	360	289	69
Average Queue (ft)	86	17	87	26	160	159	24
95th Queue (ft)	104	46	186	57	299	269	56
Link Distance (ft)	38	38	714		1882	603	
Upstream Blk Time (%)	44	1					
Queuing Penalty (veh)	119	4					
Storage Bay Dist (ft)				200			360
Storage Blk Time (%)					3	0	
Queuing Penalty (veh)					1	0	

Intersection: 15: Fort Stevens Highway Spur & SE Ensign Lane

Movement	WB	WB	B53	NB	SB
Directions Served	L	R	T	R	LT
Maximum Queue (ft)	170	191	12	25	66
Average Queue (ft)	89	22	1	1	21
95th Queue (ft)	155	112	10	11	54
Link Distance (ft)		298	318		519
Upstream Blk Time (%)		1			
Queuing Penalty (veh)		3			
Storage Bay Dist (ft)	75			175	
Storage Blk Time (%)	13				
Queuing Penalty (veh)	4				

Intersection: 16: OR 101 & SE Ensign Lane

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	L	T	R	L	T	T	R	L	T
Maximum Queue (ft)	268	309	101	149	216	36	113	222	186	146	255	167
Average Queue (ft)	148	193	8	74	122	14	50	144	73	64	125	95
95th Queue (ft)	234	294	49	130	199	30	90	214	180	120	220	154
Link Distance (ft)		446		431	431			593	593			536
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	270		315			315	365			430	325	
Storage Blk Time (%)	0	2									0	
Queuing Penalty (veh)	1	4									0	

Intersection: 16: OR 101 & SE Ensign Lane

Movement	SB
Directions Served	TR
Maximum Queue (ft)	176
Average Queue (ft)	108
95th Queue (ft)	173
Link Distance (ft)	536
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 100: NW Ridge Road

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 187

Intersection: 1: NW Ridge Road/Lake Drive & Pacific Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	54	98	61	45
Average Queue (ft)	25	50	32	21
95th Queue (ft)	49	88	53	46
Link Distance (ft)	479	2171	5451	1004
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: NW Ridge Road & Peter Iredale Road

Movement	EB	EB	WB	NB	SB
Directions Served	LT	R	LTR	LTR	LTR
Maximum Queue (ft)	31	38	31	24	15
Average Queue (ft)	10	10	18	2	1
95th Queue (ft)	33	34	37	13	9
Link Distance (ft)	959		576	618	5451
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		25			
Storage Blk Time (%)	1	1			
Queuing Penalty (veh)	0	0			

Intersection: 3: NW Ridge Road & North Site Access

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	46	4	42
Average Queue (ft)	24	0	3
95th Queue (ft)	44	3	21
Link Distance (ft)	319	1268	618
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: NW Ridge Road & Main Site Access

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	44	18
Average Queue (ft)	20	2
95th Queue (ft)	46	15
Link Distance (ft)	566	1268
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: NW Ridge Road & South Site Access

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	38	37
Average Queue (ft)	20	2
95th Queue (ft)	44	17
Link Distance (ft)	682	2539
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: NW Ridge Road & SW 9th Street

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	109	91
Average Queue (ft)	40	38
95th Queue (ft)	77	78
Link Distance (ft)	844	4599
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: 18th Street/NW Ridge Road & Delaura Beach Lane

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	29	17
Average Queue (ft)	18	1
95th Queue (ft)	29	7
Link Distance (ft)	23	1168
Upstream Blk Time (%)	5	
Queuing Penalty (veh)	3	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: NW Ridge Road & Delaura Beach Lane

Movement	EB	WB	NB
Directions Served	TR	LT	LTR
Maximum Queue (ft)	18	27	28
Average Queue (ft)	2	7	2
95th Queue (ft)	12	25	15
Link Distance (ft)	377	23	1273
Upstream Blk Time (%)		1	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: E Main Avenue (OR 104)/NE Skipanon Drive & Fort Stevens Highway/E Harbor Drive

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	TR	LT	R	LT
Maximum Queue (ft)	23	150	96	125	125	139	95
Average Queue (ft)	2	67	49	56	39	37	41
95th Queue (ft)	14	117	79	93	90	108	77
Link Distance (ft)		651		209	2514		565
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150		100			50	
Storage Blk Time (%)		0	0	0	1	1	3
Queuing Penalty (veh)		0	0	1	2	1	0

Intersection: 10: SW Cedar Drive/SW Cedar Avenue & SW 9th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	84	56	31	60
Average Queue (ft)	53	39	4	26
95th Queue (ft)	76	58	20	53
Link Distance (ft)	2209	615	211	673
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 11: E Main Avenue (OR 104) & SW 9th Street/SE 9th Street

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	147	31	122	43
Average Queue (ft)	71	4	39	2
95th Queue (ft)	122	20	88	18
Link Distance (ft)	306	337	897	480
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 12: E Main Avenue (OR 104) & Fort Stevens Highway Spur

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	95	63
Average Queue (ft)	53	22
95th Queue (ft)	82	52
Link Distance (ft)	1146	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		125
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: E Main Avenue (OR 104) & SW 18th Street

Movement	EB	EB	NB
Directions Served	L	R	LT
Maximum Queue (ft)	51	29	35
Average Queue (ft)	14	9	3
95th Queue (ft)	34	27	20
Link Distance (ft)	1274		344
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		50	
Storage Blk Time (%)	0	0	
Queuing Penalty (veh)	0	0	

Intersection: 14: US 101 & E Harbor Drive

Movement	EB	EB	B49	NB	NB	SB	SB
Directions Served	L	R	T	L	T	T	R
Maximum Queue (ft)	118	39	148	47	192	198	52
Average Queue (ft)	82	7	39	11	81	78	14
95th Queue (ft)	117	29	109	36	164	147	40
Link Distance (ft)	38	38	714		1882	603	
Upstream Blk Time (%)	26	0					
Queuing Penalty (veh)	63	0					
Storage Bay Dist (ft)				200			360
Storage Blk Time (%)					0		
Queuing Penalty (veh)					0		

Intersection: 15: Fort Stevens Highway Spur & SE Ensign Lane

Movement	WB	WB	NB	SB
Directions Served	L	R	R	LT
Maximum Queue (ft)	81	22	4	39
Average Queue (ft)	44	5	0	10
95th Queue (ft)	69	19	3	33
Link Distance (ft)		298		519
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	75		175	
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Intersection: 16: OR 101 & SE Ensign Lane

Movement	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	L	T	R	L	T	T	R	L	T
Maximum Queue (ft)	151	178	5	95	137	74	96	188	140	68	111	121
Average Queue (ft)	69	78	0	37	61	24	37	94	20	30	44	47
95th Queue (ft)	127	144	5	78	117	50	76	163	81	55	89	90
Link Distance (ft)		446		431	431			593	593			536
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	270		315			315	365			430	325	
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 16: OR 101 & SE Ensign Lane

Movement	SB
Directions Served	TR
Maximum Queue (ft)	135
Average Queue (ft)	52
95th Queue (ft)	107
Link Distance (ft)	536
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 100: NW Ridge Road

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Network Summary

Network wide Queuing Penalty: 71