

Traffic Impact Analysis

TCC Woodland Industrial Project
Woodland, WA

Prepared For:

Trammel Crow Portland Development Inc.

Prepared By:

SCJ Alliance
8730 Tallon Lane NE, Suite 200
Lacey, WA 98516
360.352.1465

November 2023



Traffic Impact Analysis

Project Information

Project: TCC Woodland Industrial Project
Prepared for: Trammel Crow Portland Development Inc.

Reviewing Agency

Jurisdiction: City of Woodland

Project Representative

Prepared by: SCJ Alliance
8730 Tallon Lane NE, Suite 200
Lacey, WA 98516
360.352.1465
scjalliance.com

Contact: Eric Johnston, PE
Anne Sylvester, PTE, Senior Consultant

Project Reference: SCJ #23-000277

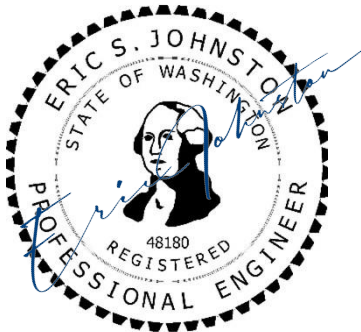
Path: N:\Projects\5528 Trammell Crow Company\23-000277 TCC Woodland Industrial\04-Dels\TIA\TCC Woodland Traffic Impact Analysis.docx

Signature

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

Anne Sylvester

Prepared by Anne Sylvester, PTE, Senior Consultant



11/13/2023

Eric Johnston

Approved by Eric Johnston, PE

Table of Contents

1	Introduction	1
1.1	Project Overview	1
1.2	Study Context	1
1.3	Report Content and Organization	2
2	Project Description	3
2.1	Development Proposal	3
3	Existing Conditions Summary.....	5
3.1	Area Land Uses	5
3.2	Roadway Inventory.....	5
3.3	Traffic Volume Data.....	7
3.4	Crash History	7
4	Project Traffic Characteristics	11
4.1	Site-Generated Traffic Volumes	11
4.2	Site Traffic Distribution and Assignment.....	12
5	Future Traffic Conditions	15
5.1	Roadway Network Improvements.....	15
5.2	Future Traffic Volumes	15
6	Traffic Operations Analysis	21
6.1	Level of Service	21
6.2	Intersection Analysis Including Industrial Park.....	21
6.3	Comparison of Intersection Operations with General Light Industrial	28
6.4	Safety Analysis.....	30
6.5	Street and Intersection Improvements	32
7	Summary and Mitigation	35

List of Tables

Table 1. Existing Crash Severity By Intersection	10
Table 2. ITE Trip Generation Rates.....	12
Table 3. Project Trip Generation.....	12
Table 4. Level of Service Criteria for Intersections	21
Table 5. PM Peak Hour Intersection Levels of Service.....	22
Table 6. PM Peak Hour Intersection Traffic Queues.....	23
Table 7. 2025 PM Peak Hour Comparison of Intersection Levels of Service	28
Table 8. 2025 PM Peak Hour Comparison of Industrial Park and General Light Industrial Queues	29

List of Figures

Figure 1. Site Vicinity Map	1
Figure 2. Project Site Plan	4
Figure 3. Existing Channelization and Intersection Control.....	8
Figure 4. Existing 2023 PM Peak Hour Traffic Volumes	9
Figure 5. Site Generated Traffic Volumes PM Peak Hour - Industrial Park.....	13
Figure 6. Site Generated Traffic Volumes PM Peak Hour - General Light Industrial	14
Figure 7. Projected 2025 PM Peak Hour Traffic Volumes With Project - Industrial Park	18
Figure 8. Projected 2025 PM Peak Hour Traffic Volumes With Project - General Light Industrial.....	19

List of Appendices

Appendix A	Traffic Count Data
Appendix B	Crash Data
Appendix C	Traffic Volume Calculations
Appendix D	Operational Analysis Worksheets

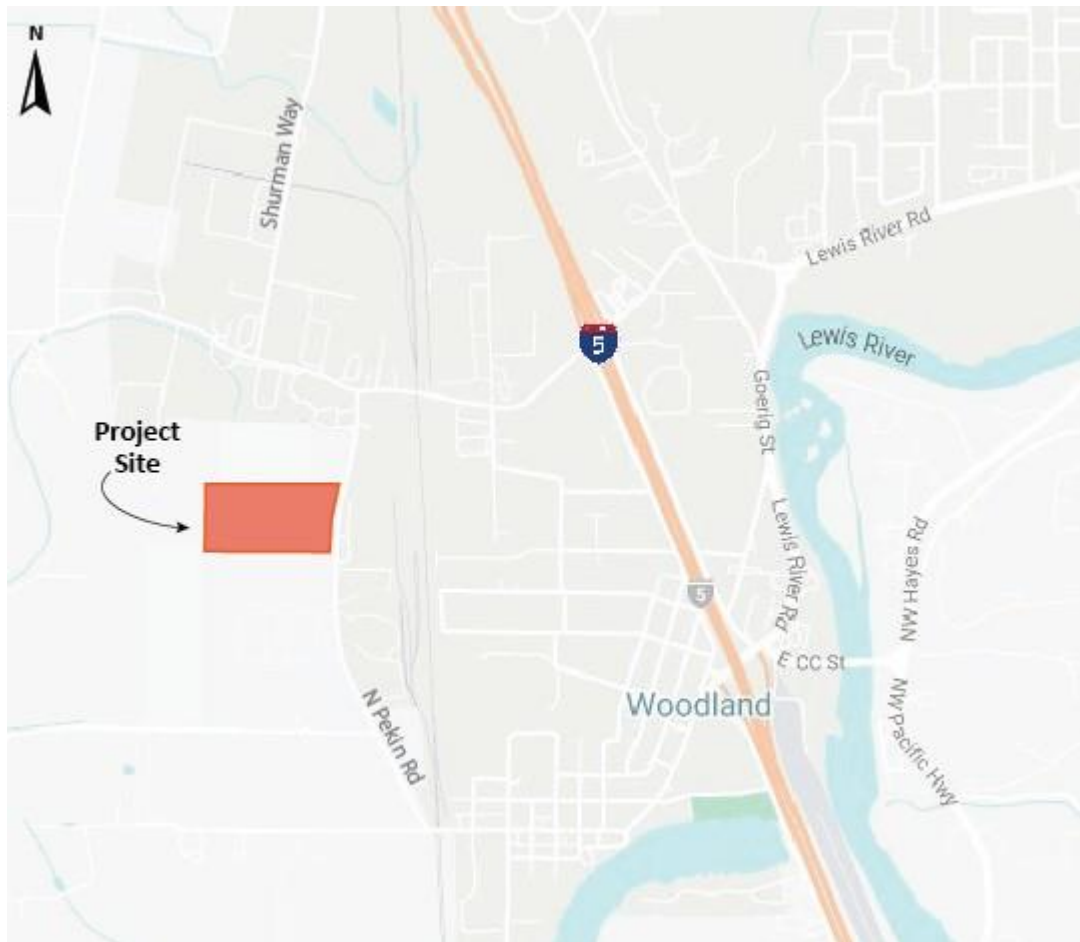
1 Introduction

1.1 Project Overview

A TCC Woodland Industrial Project is being proposed on an undeveloped parcel located at 345 N Pekin Road in Woodland, Washington, approximately 1,600 feet north of Caples Road and 800 feet south of Guild Road. The industrial project is proposed to be 925,180 square feet in size and is expected to consist of two buildings.

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

Figure 1. Site Vicinity Map



1.2 Study Context

A traffic scoping letter was prepared and submitted to the City of Woodland and WSDOT for review. This scoping letter identified initial trip generation based on a preliminary project site plan, and trip distribution assumptions based on data from the CWCOC's regional travel demand model. This model was used for the longer-term analysis conducted as part of the *Woodland Industrial Transportation Study* prepared in 2021, and provided guidance on the directional orientation of project trips.

From this analysis and based on guidance from City and WSDOT staff, the following intersections were identified for evaluation:

- ◆ Dike Access Road at Schurman Way
- ◆ Dike Access Road at I-5 southbound ramps
- ◆ Dike Access Road at I-5 northbound ramps
- ◆ Guild Road at Schurman Way
- ◆ N Pekin Road at Guild Road/Scott Avenue
- ◆ N Pekin Road at Goerig Road
- ◆ Davidson Street at S Pekin Road
- ◆ SR 503 at I-5 southbound ramps
- ◆ SR 503 at I-5 northbound ramps
- ◆ SR 503 at CC Street
- ◆ Scott Avenue at I-5 southbound off-ramp
- ◆ N Pekin Road at Site Driveways

This Traffic Impact Analysis report has been prepared to provide project-related traffic information at these intersection for the City of Woodland and WSDOT in reviewing the development proposal. Operational analysis would be prepared for the PM peak hour with existing (2023), and forecasted year of opening (2025) conditions with and without project completion. The analysis would include evaluation of intersection level of service and queuing and would identify turn lane and/or traffic control requirements.

1.3 Report Content and Organization

This report is organized into seven chapters, the first of which is this Introduction. **Chapter 2** provides a description of the project proposal including a preliminary site plan.

Chapter 3 documents existing conditions within the study area and the larger Woodland community. Information presented in this chapter includes a discussion of the existing land use in the vicinity of the project, an inventory of the existing multimodal transportation system including street and intersection characteristics, existing traffic volumes, and recent five year crash history.

Chapter 4 discusses project trip-making characteristics including trip generation and the distribution and assignment of trips.

Chapter 5 presents a summary of future background traffic conditions excluding the proposed project. The purpose of this information is to provide a basis of comparison with conditions that include project traffic so that specific, project-related impacts can be identified. Pending and proposed roadway improvements in the vicinity of the project are also included in this chapter.

Chapter 6 summarizes and compares the analysis of existing and future horizon year traffic operations at study area intersections for conditions with and without the proposed project. Project-related traffic impacts are identified and the need for potential impact mitigation is determined.

Chapter 7 presents a discussion of recommended transportation system improvements stemming from the impact analysis and including the need for a half-width improvement on Rose Way to the west of the project site. Traffic impact fee requirements are also discussed.

2 Project Description

2.1 Development Proposal

The *TCC Woodland Industrial* project will consist of two industrial buildings totaling approximately 925,180 square feet located at 345 N Pekin Road in Woodland, Washington. These buildings would be situated on approximately 67.49 acres of undeveloped land. Access to and from the project site is proposed to be via four driveways on N Pekin Road and five driveways on the future extension of Rose Way.

On N Pekin Road, the northern driveway would access both the auto and truck parking areas for Building B with auto parking on the east side of the building adjacent to N Pekin Road and both auto and truck parking on the west side of the building adjacent to a stormwater management facility. The next two driveways to the south would provide access primarily to the auto parking area along the east side of Building B. The southern driveway would provide access for Building A which is oriented north/south on the western portion of the property.

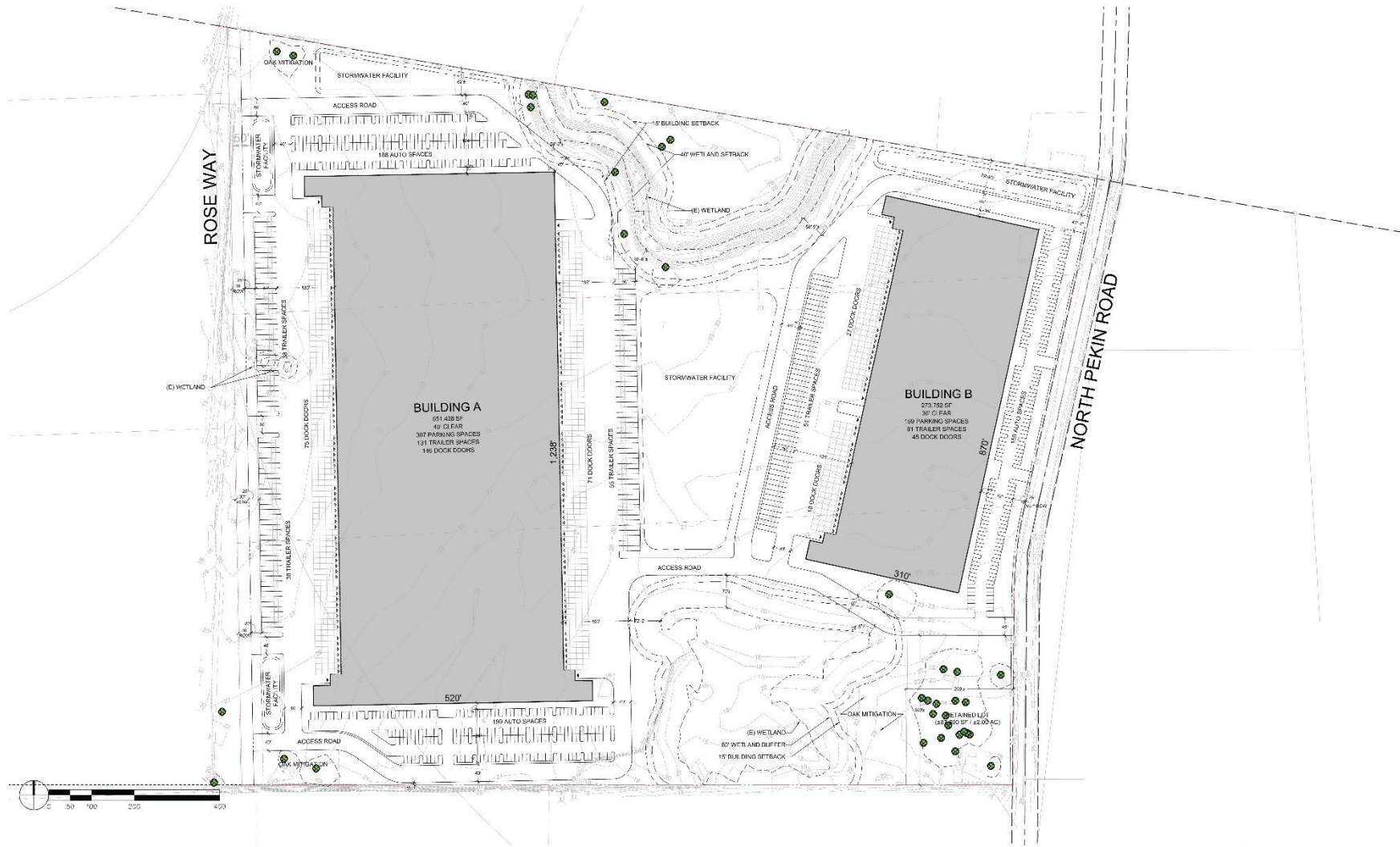
Building A would also have access to the transportation system via Rose Way as that facility would provide a connection to the larger community transportation system. The northern driveway on Rose Way would provide access to auto parking spaces on the north side of Building A and to truck parking and loading docks on the east side of the building. The second, third and fourth driveways would provide access to truck parking and loading docks on the west side of Building A. The southerly driveway would provide access to auto parking on the south side of the building and would connect to truck parking on the east side of the building. This access road would also provide an east/west connection across the site to link with both Building B and N Pekin Road. It is anticipated that this connection would be developed in lieu of a proposed east/west street connection identified in the *Woodland Industrial Site Study* (dated April 2021) in the general vicinity of the project site. Given that the project would provide a complete connection between N Pekin Road and Rose Way no other public facility would be necessary. The east/west public circulation function can be provided by Guild Road to the north and Caples Road to the south. Fire access and circulation could be accommodated on this proposed internal site road.

It is anticipated that the project will construct an urban half-width improvement along Rose Way providing full site access and circulation and would be in place by project opening year of 2025 including a connection between the project site and Guild Road to the north. Ultimately Rose Way will be extended further to the south with a connection to Caples Road as this area develops.

The site could be developed for industrial park or general light industrial uses depending on the needs of the ultimate tenant. For purposes of this Traffic Impact Analysis, analysis of both land use types have been considered with general light industrial representing the maximum potential site impact. The project is also proposed to have a total of 535 auto parking spaces and 182 trailer parking spaces with 191 truck docks.

Figure 2 presents the proposed site layout plan.

Figure 2. Project Site Plan



TRAMMELL CROW COMPANY
WOODLAND SITE

SITE PLAN - OPTION 2
October 10, 2023 | Mackenzie | 2220334.00



3 Existing Conditions Summary

3.1 Area Land Uses

The proposed *TCC Woodland Industrial Project* site is currently undeveloped. Adjacent properties include a mix of industrial and agricultural uses.

3.2 Roadway Inventory

3.2.1 N Pekin Road

N. Pekin Road is a north/south major collector road that runs from W. Scott Avenue on the north to Davidson Avenue on the south. Davidson Avenue connects N. Pekin Road to downtown Woodland and the I-5/SR 503 interchange (Exit 21). The road continues south as S. Pekin Road via an offset intersection at Davidson Avenue. N Pekin Road has one travel lane in each direction with shoulders and provides access to/from industrial areas located west of the railroad tracks. At its north end, N. Pekin Road is stop sign-controlled at its intersection with Scott Avenue. The speed limit is 35 mph.

3.2.2 Guild Road/W Scott Avenue

In the vicinity of the project, Guild Road is an east-west city-owned local access street that provides a single travel lane in each direction between west of the city limits and Schurman Way. From Schurman Way to N. Pekin Road, Guild Road is designated as a major collector, and provides a single travel lane in each direction. As noted in Table 2, collector streets provide for movement within a community, linking neighborhoods to higher order streets like arterials. Property access is generally a high priority for collectors with a lower priority for through traffic movement. Guild Road has intermittent sidewalks and bicycle lanes. Left turn channelization is provided at the intersection with Schurman Way, which is stop-controlled for southbound Schurman Way traffic. A continuous left turn lane is provided for property access between Schurman Way and N. Pekin Road. The speed limit on Guild Road is 35 mph.

East of N. Pekin Road, Guild Road becomes W. Scott Avenue which continues in an east/west travel direction to its intersection with Pacific Avenue and the I-5 southbound off-ramp. Scott Avenue is designated as a major collector street and has a single travel lane in each direction. A narrow, curb-tight sidewalk is provided along the south side of the street between N Pekin Road and the Burlington Northern Santa Fe (BNSF) mainline where a gated crossing is provided. The sidewalk on the south side of Scott Avenue continues to the intersection with Pacific Avenue, while sidewalks on the north side are intermittent. There are no bicycle lanes on Scott Avenue and no intersection lane channelization at either Down River Drive or Pacific Avenue. Scott Avenue is stop sign-controlled at Pacific Avenue. The speed limit on Scott Avenue is 35 mph.

3.2.3 Schurman Way

Schurman Way has been classified as a major collector for its entire length between Dike Access Road on the north and Guild Road on the south. Schurman Way has a single travel lane in each direction and serves the heart of one of Woodland's major industrial areas. Schurman Way has a continuous two-way left turn lane through much of its length with northbound left turn channelization at Heritage Street (an east/west local industrial access road), north and southbound left turn channelization at Port Way, and southbound left turn channelization at Guild Road. Schurman Way is stop sign-controlled at its

intersection with Guild Road and has a single lane roundabout at its intersection with Dike Access Road. There is an uncontrolled railroad crossing south of Heritage Street for a spur line that serves several industrial properties. There are intermittent sidewalks along Schurman Way adjacent to developed properties. The speed limit is 35 mph.

3.2.4 Dike Access Road

Dike Access Road is an east-west minor arterial that connects I-5 with the industrial and commercial areas of the north and western portions of the city. Dike Access Road has a fully-directional interchange with I-5 (Exit 22) that is served by two single lane roundabouts. Immediately west of the interchange, Dike Access Road has another roundabout at its intersection with Schurman Way. The north side of this intersection offers direct access to Wal-Mart and a fast food facility. Dike Access Road has a single travel lane in each direction and has sidewalks on both sides through the intersection with Robinson Road. Sidewalks continue on the north side adjacent to the Woodland High School. Two-way left turn channelization is provided from west of the Schurman Way roundabout to the west end of the high school frontage with left turn channelization at Robinson Road. No bicycle lanes are provided. The street is signed for 35 mph speeds.

3.2.5 Caples Road

Caples Road is an east/west minor collector from its intersection with N. Pekin Road westward to the Columbia River. The road has two travel lanes with a speed limit of 35 mph and provides access to a largely agricultural area. There are no shoulders, sidewalks or bicycle lanes along this facility and the road is stop-controlled at its intersection with N. Pekin Road.

3.2.6 Goerig Street/Goerig Road/Davidson Street

West of I-5, Goerig Street is a two-lane major collector that links the west side of Woodland with the City's downtown area and the I-5/SR 503 interchange (Exit 21). Moving west from I-5, Goerig Street has curb, gutter, and sidewalks on both sides of the street and a speed limit of 25 mph. Within the downtown area, Goerig Street is known as Davidson Street and has sidewalks and parking along both sides. Davidson Street has an at-grade crossing of the BNSF mainline just west of its intersection with 6th Street. The crossing includes gates and flashing signal lights. Just west of the railroad crossing, Davidson Avenue splits into Goerig Road and N Pekin Road. West of N Pekin Road, Goerig Road becomes a local access street which is yield-controlled at its intersection with N Pekin Road. This portion of Goerig Road has two travel lanes with no shoulders and is signed for 35 mph speeds.

3.2.7 S. Pekin Road

S Pekin Road, also known as 5th Street within the City, connects downtown Woodland and Davidson Avenue to the unincorporated areas of Cowlitz County south of Woodland. The roadway is classified as a minor collector and has two travel lanes with a speed limit of 35 mph.

3.2.8 State Route 503/Lewis River Road

State Route 503 (SR 503) provides regional access from I-5 to areas in east Cowlitz and Clark Counties, as well as parts of Skamania County. The city classifies SR 503 as a Minor Arterial. It is not part of the national highway system, nor is it classified as a Highway of Statewide Significance (HSS). Within the city, SR 503 (also known as Lewis River Road) has four travel lanes at its interchange with I-5, with additional

left-turn lanes at the intersections with the on- and off-ramps and at CC Street immediately east of the interchange. East of CC Street, the roadway narrows to a three-lane cross-section, including a center, two-way, left-turn lane. Traffic signals are currently located at the I-5 southbound on-ramp, the I-5 northbound off-ramp, and the intersection with CC Street. The street is posted for 30 mph speeds through the interchange area.

3.2.9 CC Street

CC Street is a two-lane minor arterial street that intersects Lewis River Road immediately to the east of the I-5 northbound off-ramp/Atlantic Avenue intersection. The street provides for a bridge crossing of the North Fork of the Lewis River and connects Woodland to rural portions of northern Clark County on Pacific Highway. In Woodland, there is a curb-tight sidewalk along the east side of the street which ends just north of the Lewis River bridge. The street is posted for 25 mph speeds.

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

3.3 Traffic Volume Data

Quality Counts, a traffic data collection firm, provided evening peak period turning movement counts. The counts were conducted on May 17, 2023 between the hours of 4:00 and 6:00 pm at the following locations:

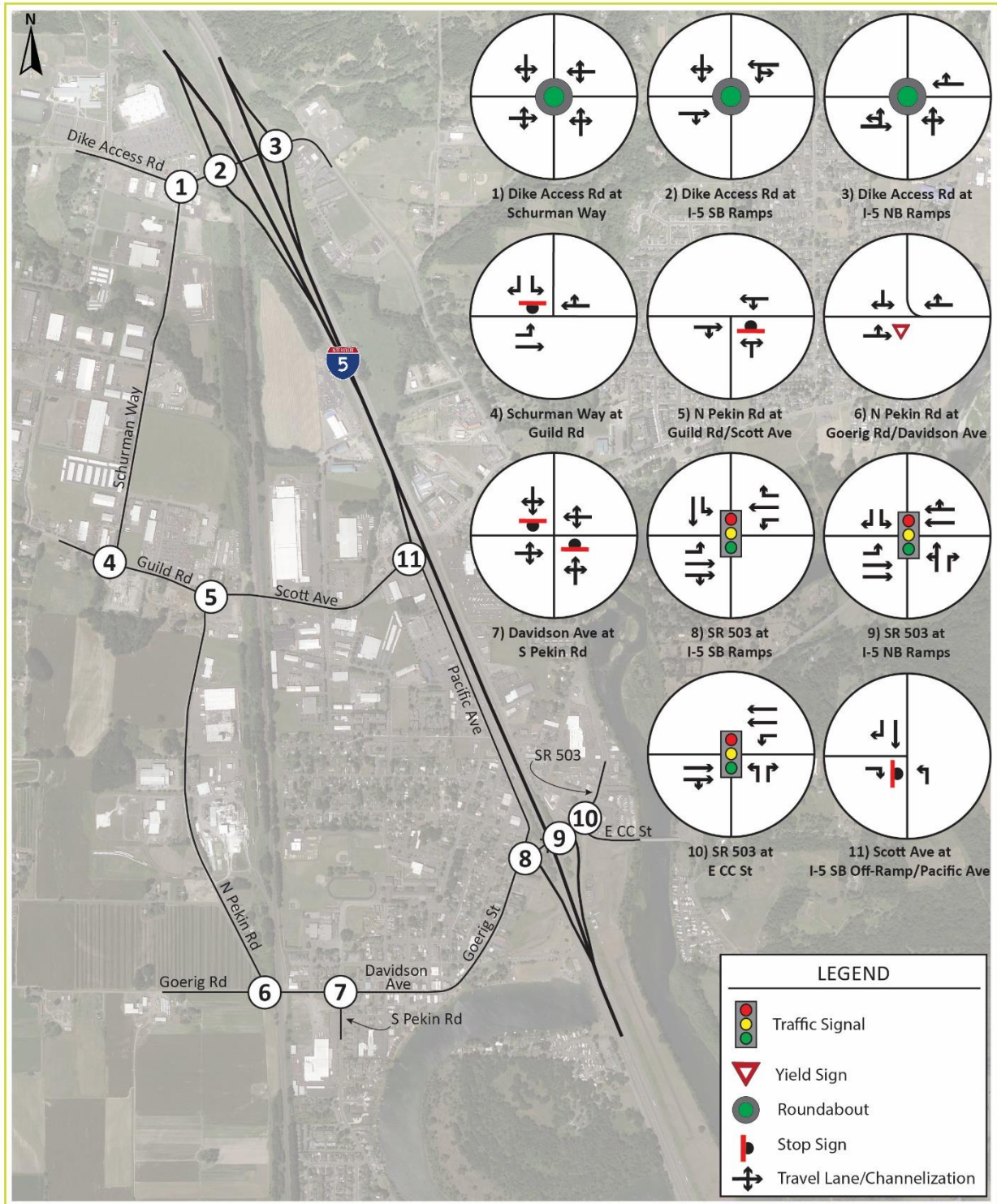
- Dike Access Road at Schurman Way
- Dike Access Road at I-5 southbound ramps
- Dike Access Road at I-5 northbound ramps
- Guild Road at Schurman Way
- N Pekin Road at Guild Road/Scott Avenue
- N Pekin Road at Goerig Road
- Davidson Street at S Pekin Road
- SR 503 at I-5 southbound ramps
- SR 503 at I-5 northbound ramps
- SR 503 at CC Street
- Scott Avenue at I-5 southbound off-ramp
- N Pekin Road at Site Driveways

No adjustment was made to these traffic counts for lingering effects due to the Covid-19 pandemic.

Figure 4 shows the 2023 PM peak hour traffic volumes. The original turning movement count diagrams are provided in **Appendix A**.

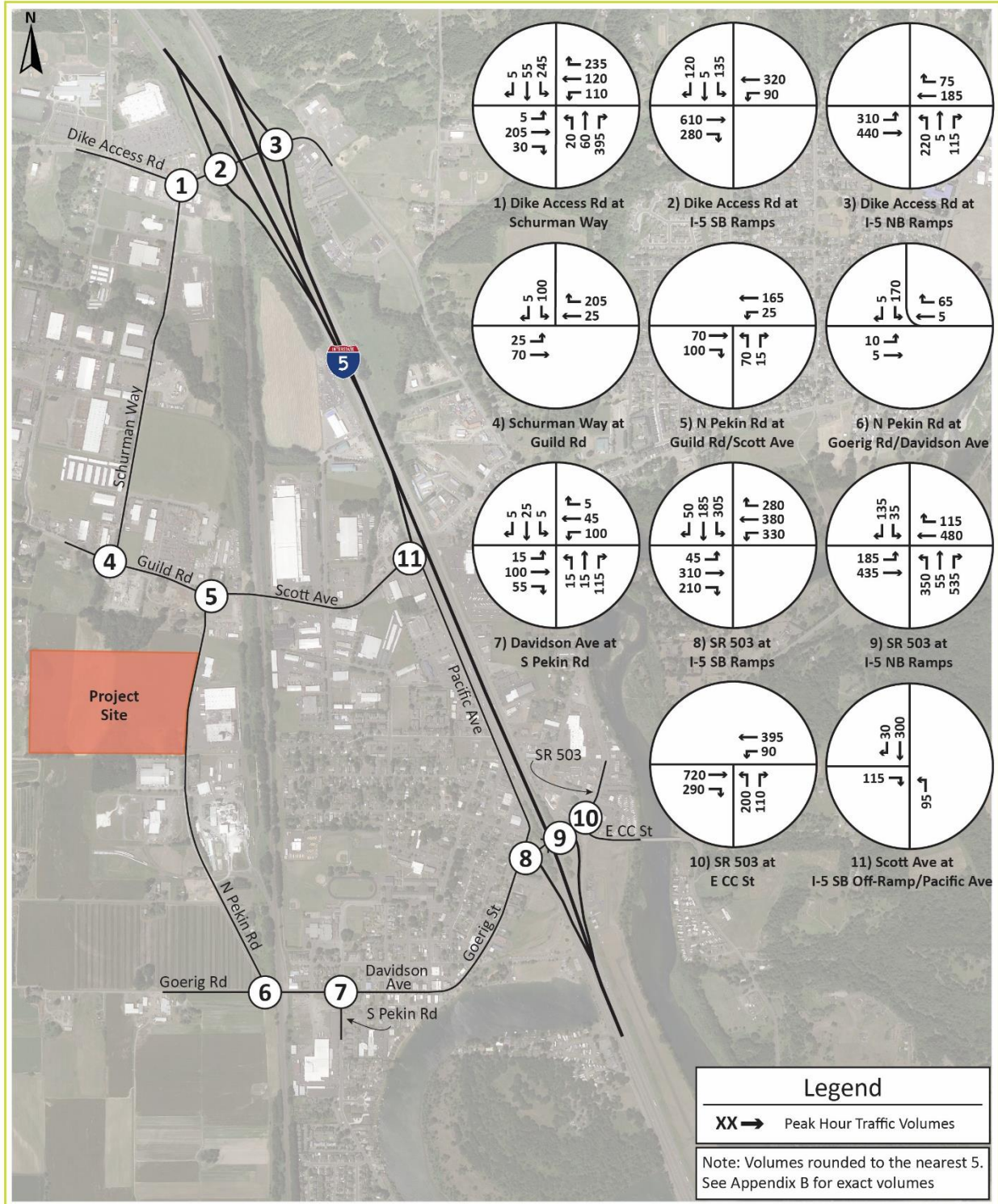
3.4 Crash History

The Washington Department of Transportation provides crash data for study area roadways. The data was collected over the five-year period between January 1, 2018 and December 31, 2022 and reviewed for the study area intersections. The total crashes by severity are provided in **Table 1**. More detailed crash data is provided in **Appendix B**.



TCC Woodland Industrial Development
 Woodland, Washington
 Traffic Impact Analysis

Figure 3
 Existing Intersection Control
 and Channelization



TCC Woodland Industrial Development
 Woodland, Washington
 Traffic Impact Analysis

Figure 4
 Existing 2023 PM Peak Hour
 Traffic Volumes

Table 1. Existing Crash Severity By Intersection

Intersection	Fatal	Serious Injury	Minor Injury	Possible Injury	Property Damage Only	Total
Dike Access Road at Schurman Way	0	0	0	1	4	5
Dike Access Road at I-5 SB ramps	0	0	0	1	9	10
Dike Access Road at I-5 NB ramps	0	0	1	0	2	3
Guild Road at Schurman Way	0	0	0	0	2	2
N Pekin Road at Guild Road/Scott Avenue	0	0	0	0	0	0
N Pekin Road at Goerig Road	0	1	0	0	1	2
Davidson Street at S Pekin Road	0	0	0	0	0	0
SR 503 (Lewis River Road) at I-5 SB Ramps/Pacific Avenue	0	0	2	4	9	15
SR 503 (Lewis River Road) at I-5 NB Ramps/Atlantic Avenue	0	0	1	3	21	25
SR 503 (Lewis River Road) at CC Street	0	0	0	0	5	5
Scott Avenue at I-5 SB off-ramp	0	0	0	0	4	4
Total Crashes	0	1	4	9	57	71

There were no fatalities and only one serious injury crash reported. This crash occurred at the intersection of N Pekin Road at Goerig Road on September 12, 2021 at 6:15 in the evening. The crash involved a pick-up or van which traveled over an embankment off the road. No guardrail was present and the weather was clear and dry during daylight hours. Contributing causes were identified as defective equipment and an unknown distraction. Overall, approximately 80 percent of all the reported crashes were classified as property damage only (with no apparent injury).

4 Project Traffic Characteristics

The two project-related characteristics having the most effect on area traffic conditions are peak hour trip generation and the directional distribution of traffic volumes on the surrounding roadway network.

4.1 Site-Generated Traffic Volumes

Vehicle trip generation was calculated using the trip generation rates contained in the 11th edition of the *Trip Generation Manual* by the Institute of Transportation Engineers (ITE). Given the unknown nature of the land uses expected for the site, two land use alternatives have been evaluated, either of which may best match the type of potential development that could occur. These include:

- Industrial Park (land use code 130)
- General Light Industrial (land use code 110)

Trip generation for site-related traffic can be characterized in terms of whether it is primary traffic or non-primary traffic as described below.

4.1.1 Primary Traffic

A project such as a major warehouse or industrial facility tends to attract a large amount of traffic from people making a trip specifically to this site. This traffic is known as “primary” trips and would be new to the existing roadway system.

4.1.2 Non-Primary Traffic

Some developments may also attract traffic from people already driving on area roadways. These trips are not new trips added to the local roadways (primary trips) but represent “non-primary” trips according to the following definitions:

Pass-by trips are trips made as an intermediate stop from an origin to a primary destination (i.e., stopping to shop on the way home from work) by vehicles passing directly by the project driveway. No pass-by trips are assumed for this development.

Diverted Trips are similar to pass-by trips, except diverted trips require a diversion from their original route onto another roadway to reach the site. These trips are not technically new trips but are new to the roadways in the immediate vicinity of a project.

To provide a conservative analysis it is assumed that all site trips will be primary trips. No pass-by trips are expected due to the nature of the destination as an employment and goods distribution hub and its location in the midst of Woodland’s industrial westside. A minor number of diverted trips may occur but this is likely to be incidental. Therefore, the presence of diverted trip is not included in the trip analysis documented in this report.

Table 2 shows a summary of the trip generation characteristics for the two land use categories under consideration in this Traffic Impact Analysis report – Industrial Park and General Light Industrial. Industrial Park trip generation was assumed as part of the Traffic Scoping report originally prepared for this project. General Light Industrial is considered as a “worst case” alternative reflecting potential trips that could be associated with that use. More detailed trip generation information is included in **Appendix C**.

Table 2. ITE Trip Generation Rates

Time Period	Variable	Industrial Park (130)			General Light Industrial (110)		
		Trip Rate	Enter %	Exit %	Trip Rate	Enter %	Exit %
AM Peak Hour	1,000-sqft	0.34 ¹	81%	19%	0.74 ¹	88%	12%
PM Peak Hour	1,000-sqft	0.34 ¹	22%	78%	0.65 ¹	14%	86%
Daily	1,000-sqft	3.37 ¹	50%	50%	4.87 ¹	50%	50%

1. Average rate was used

The total trip generation expected from this project is calculated by applying the unit measure for each land use category to the appropriate trip generation rate. The trip generation for the two potential land uses in the proposed *TCC Woodland Industrial* project is shown in **Table 3** below.

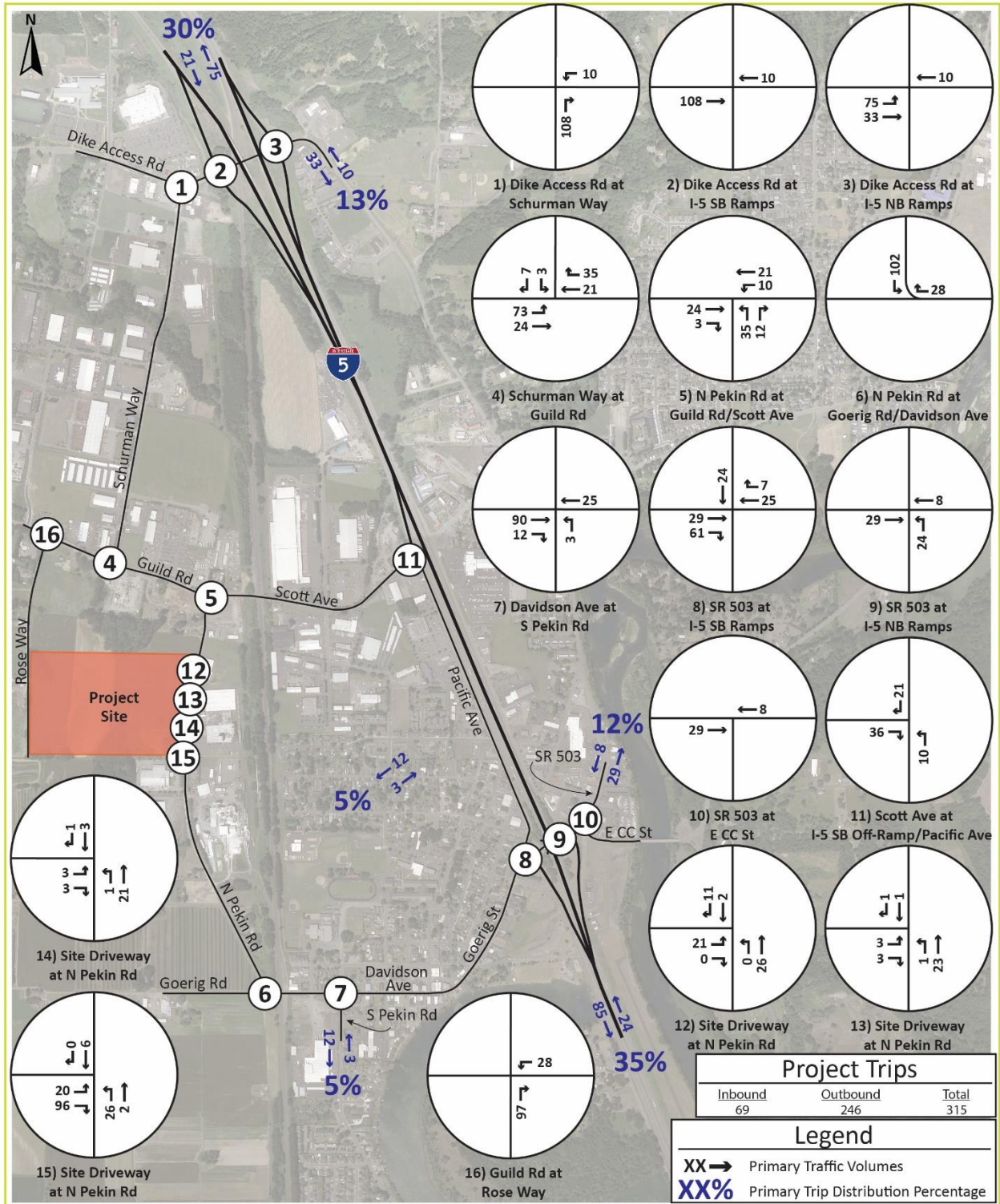
Table 3. Project Trip Generation

Time Period	Size	Industrial Park			General Light Industrial		
		Total Trips	Enter	Exit	Total Trips	Enter	Exit
AM Peak Hour	925.18	315	258	60	685	603	82
PM Peak Hour	925.18	315	69	246	601	84	517
Daily	925.18	3,118	1,559	1,559	4,506	2,253	2,253

4.2 Site Traffic Distribution and Assignment

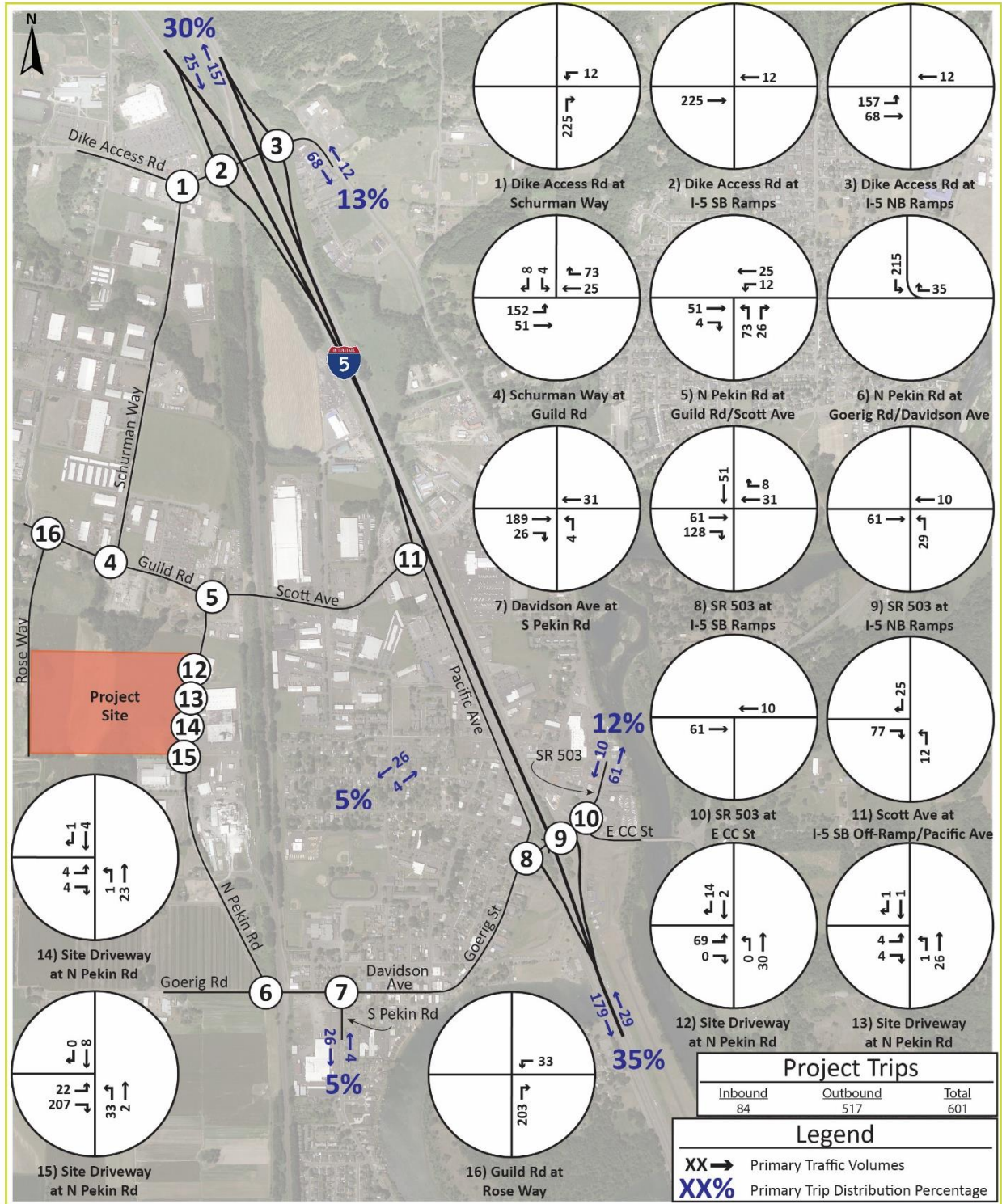
The trip distribution patterns identified in this figure were initially based on output from the Woodland travel demand model that was updated for the City’s I-5/Exit 21 study and used as part of the *Woodland Industrial Site Study, Transportation Analysis* conducted in 2021. Traffic distribution from TAZ 404 was evaluated in the context of wider community land use patterns (i.e. residential and commercial destinations that would attract trips to/from the project site) and traffic orientation to the I-5 corridor (for commercial and employment trips to and from Woodland). This evaluation was used to determine appropriate trip distribution assumptions for the project site.

A graphic showing the trip distribution percentages and assigned PM peak hour trips attributable to the project assuming Industrial Park development is provided in **Figure 5**. Trip distribution assuming General Light Industrial land use is shown in **Figure 6**. The PM peak hour was selected for analysis as background traffic volumes on the existing street system are typically higher during that time period.



TCC Woodland Industrial Development
Woodland, Washington
Traffic Impact Analysis

Figure 5
Site-Generated Traffic Volumes
PM Peak Hour - Industrial Park



TCC Woodland Industrial Development
Woodland, Washington
Traffic Impact Analysis

Figure 6
Site-Generated Traffic Volumes
PM Peak Hour - General
Light Industrial

5 Future Traffic Conditions

5.1 Roadway Network Improvements

There are multiple network improvements planned within the study area. The following have been identified in the *Woodland Six Year Transportation Improvement Program (2021 to 2026)*:

- **West Scott Avenue from Schurman Way to Pacific Avenue** - Full depth reclamation and sidewalks on West Scott Avenue and Guild Road from Schurman Way to Pacific Avenue. Project will also include pedestrian and water line crossing of railroad. Construction is noted as beginning in 2021 with completion in 2023.
- **I-5 at Exit 21 (SR 503)** - Exit 21 Interchange Project I-5 and SR-503 from Pacific Avenue to Atlantic Avenue – Develop designs to add capacity and enhance safety through Exit 21 on both sides of I-5. The design effort is anticipated to begin in 2023.
- **Scott Avenue Transportation Study** - Conduct Scott/Atlantic/Pacific Area Transportation Study to develop redesign of Scott, Pacific, and Atlantic Avenue areas, including I-5 exits and pedestrian facilities. Planning study was identified for 2021.
- **W Scott/Pacific Avenue Slip Lane** – Provide slip lane to accommodate southbound traffic heading to destinations on Pacific Avenue. Project is slated to occur in 2026.
- **Davidson/Railroad/Goerig Intersection Improvements** - Improve traffic flow at intersection of Davidson and Goerig, including RR crossing. A planning study was anticipated to begin in 2021.
- **Goerig Street Overlay and ADA Ramps** - Goerig Street from Buckeye Street to Davidson Street - Grind and overlay Goerig Street and improve seven ADA ramps. Construction is noted for 2021.
- **Lakeshore Drive** - Lakeshore Drive from Goerig Street to city limits – Pavement and pedestrian improvements to include surface repairs and/or replacement, as well as a HMA path along portion of project area. Preliminary engineering was slated for 2021 with construction for 2022.
- **CC Bridge Upgrade/Replacement** - Replace or upgrade the existing CC Street Bridge between Cowlitz and Counties.

None of these improvements are expected to be complete prior to the proposed project and/or will not impact the operational analysis of the study intersections.

5.2 Future Traffic Volumes

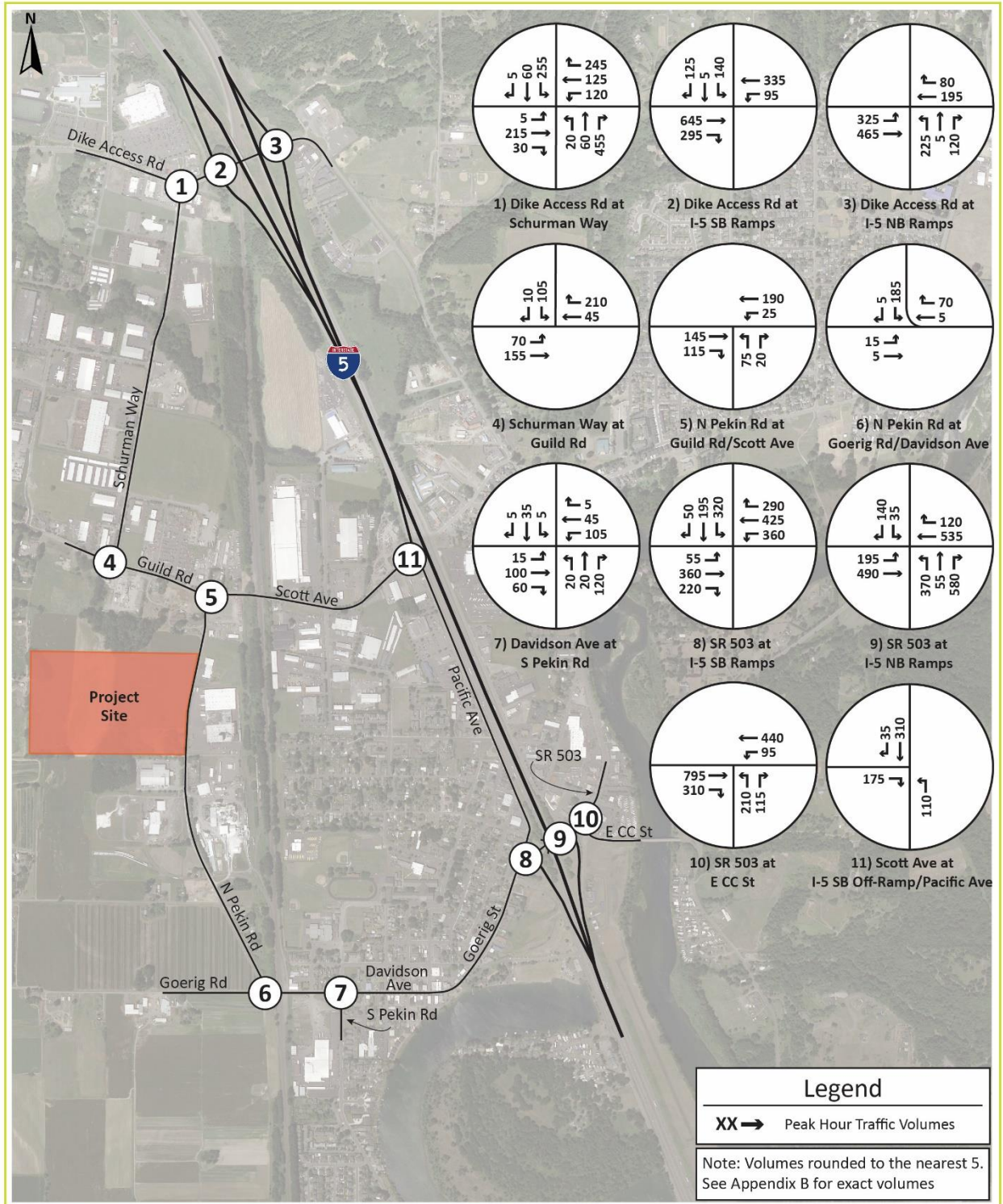
Traffic volume forecasts were prepared for PM peak hour conditions for the 2025 opening year. The future traffic volume forecast includes non-specific background traffic growth, pipeline development traffic and estimated traffic generated by the proposed *TCC Woodland Industrial* project.

Future year non-project related traffic volumes were estimated based on a general, non-specific forecast of background traffic growth, coupled with traffic attributable to specific projects in the vicinity which have been approved but not yet constructed (“pipeline” projects). Non-specific background growth was estimated using a 2.0 percent annual (non-compounded) growth rate. This rate is slightly higher than the longer-term forecasts used in the Exit 21 study but only represents a couple of years growth.

The City of Woodland has identified five pipeline projects for consideration in developing future background traffic volumes at study area intersections. These included:

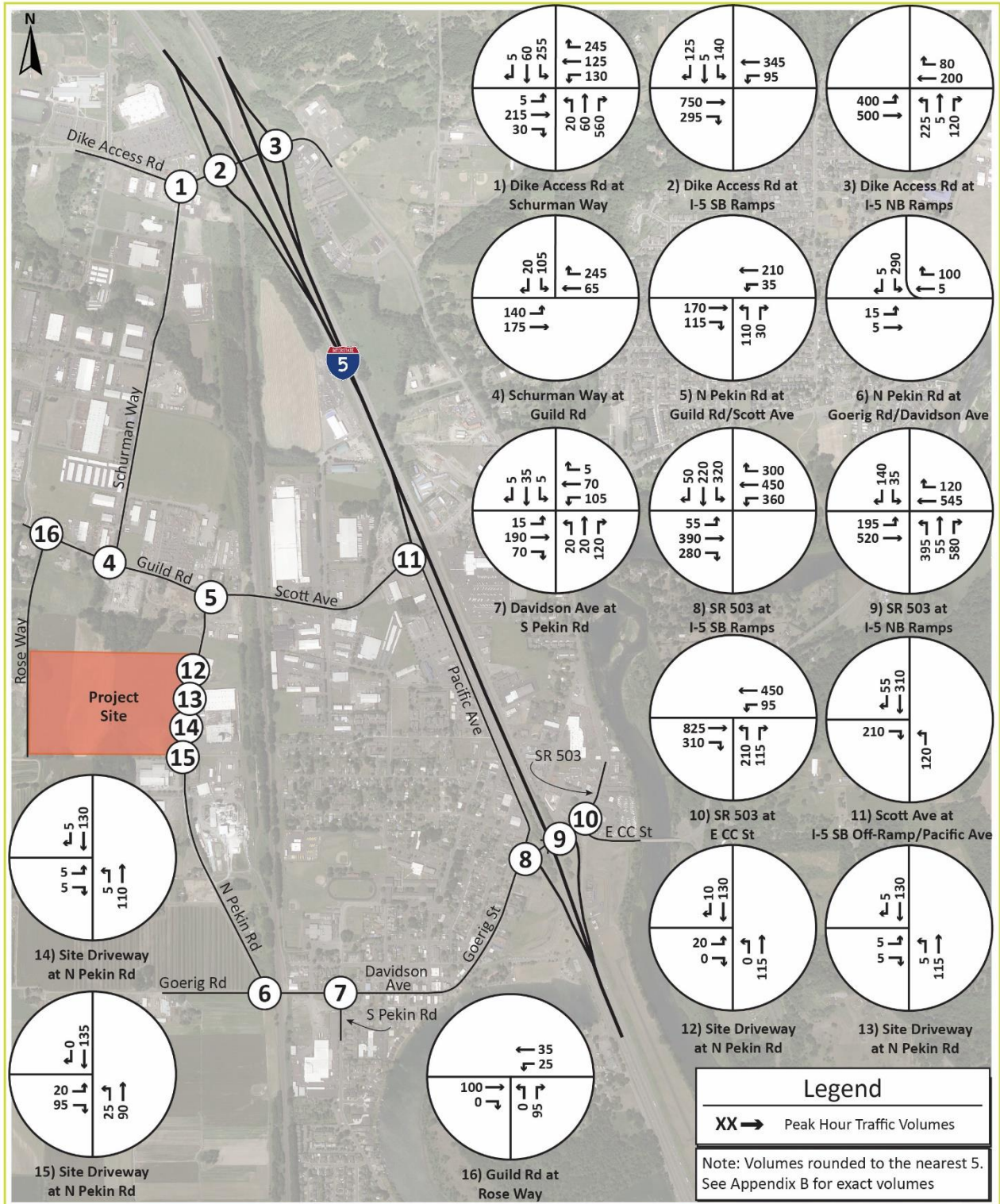
- *Guild Road Industrial* – this project would be located on Guild Road between Robinson Road and Schurman Way. It includes 37,500 square feet of manufacturing and warehouse facilities and is expected to generate 28 PM peak hour trips.
- *Woodland Library* – this project would be located on the southeast corner of the intersection of Goerig Street and Buckeye Street/Lakeshore Drive, just to the west of the I-5 southbound ramps at Exit 21. It includes a 10,000 square foot building that will include both the library and the Woodland Tourist Information Center (which will be relocated from its existing building). A total of 71 new trips were estimated for the PM peak hour.
- *Woodland Creek Subdivision* – this project would consist of 150 single-family housing units on the west side of Lewis River Road across from McCracken Road. This project is expected to generate a total of 149 PM peak hour trips.
- *Port of Woodland Industrial Park* – this project would be located on the south side of Guild Road to the west of Schurman Way. It would include 126,000 square feet of general light industrial uses and would generate an estimated 122 PM peak hour trips.
- *Quail Meadows Subdivision* – this project would consist of 31 single-family housing units on the west side of Lewis River Road across from Spruce Avenue and Salmon Street. This project is expected to generate a total of 31 PM peak hour trips, none of which were identified as reaching the I-5 interchange. Accordingly, traffic from this project has not been included in the development of background traffic for study area intersections.

The projected 2025 PM peak hour traffic volumes without the *TCC Woodland Industrial* project are shown in **Figure 7**. The projected 2025 PM peak hour traffic volumes with the industrial park land use are shown in **Figure 8**, while **Figure 9** illustrates expected 2025 PM peak hour trips with the general light industrial land use. The traffic volume calculations for the study intersections are included in **Appendix C**.



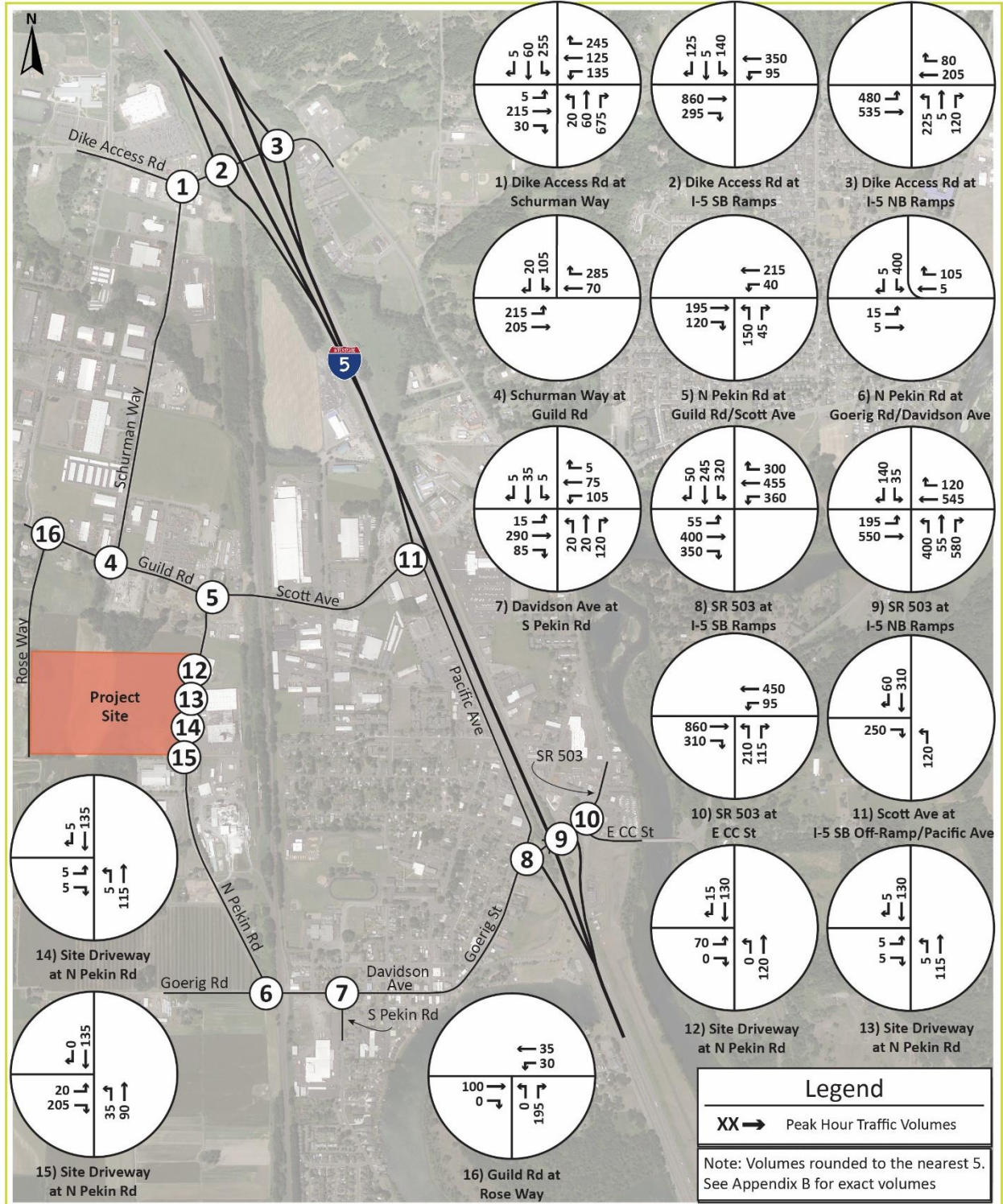
TCC Woodland Industrial Development
 Woodland, Washington
 Traffic Impact Analysis

Figure 7
 Projected 2025 PM Peak Hour
 Traffic Volumes Without Project



TCC Woodland Industrial Development
Woodland, Washington
Traffic Impact Analysis

Figure 8
Projected 2025 PM Peak Hour
Traffic Volumes With Project -
Industrial Park



TCC Woodland Industrial Development
Woodland, Washington
Traffic Impact Analysis

Figure 9
Projected 2025 PM Peak Hour
Traffic Volumes With Project -
General Light Industrial

This page intentionally blank.

6 Traffic Operations Analysis

Traffic analyses were conducted to identify any deficiencies within the study area for the PM peak hour in the 2023 base year and the 2025 project opening year.

6.1 Level of Service

The acknowledged source for determining overall capacity for arterial segments and independent intersections is the current edition of the *Highway Capacity Manual (HCM)* published by the Transportation Research Board (TRB).

Intersection analysis was performed using the Synchro software package. This software implements the methods of the 6th Edition HCM. Capacity analysis results are described in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a street or highway during a specific time interval. LOS ranges from A (very little delay) to F (long delays and congestion).

The City of Woodland has no adopted level of service standards, while WSDOT considers LOS D at signalized intersections and LOS E at unsignalized intersections to be the minimum acceptable performance standards. These have been assumed for this analysis.

6.1.1 Intersection Level of Service Criteria

For intersections under minor street stop-control, the LOS of the most difficult movement (typically the minor street left-turn) represents the intersection Level of Service for purposes of assessing potential impacts. For traffic signals, the intersection average delay is used to assess potential impacts. The following table shows the Level of Service criteria for stop-controlled intersections and signalized intersections.

Table 4. Level of Service Criteria for Intersections

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

6.2 Intersection Analysis Including Industrial Park

The analysis was conducted for the following scenarios:

- Existing 2023 traffic volumes
- Projected 2025 background traffic volumes without the *TCC Woodland Industrial* project
- Projected 2025 traffic volumes with the *TCC Woodland Industrial* project assuming Industrial Park development

The operational analysis results of the study intersections for the PM peak hour are provided in **Table 5**. The LOS analysis worksheets are included in **Appendix D**.

Table 5. PM Peak Hour Intersection Levels of Service

Intersection	Control Type	LOS Standard	Base Year 2023		Projected 2025				
			LOS (delay)	V/C Ratio	Without Project		With Industrial Park		
					LOS (delay)	V/C Ratio	LOS (delay)	V/C Ratio	
1	Dike Access Road at Schurman Way	RBT ¹	E	A (7.5)	0.53 ³	A (8.0)	0.61 ³	A (8.9)	0.73 ³
2	Dike Access Road at I-5 SB ramps	RBT ¹	E	A (7.9)	0.81 ³	A (9.1)	0.86 ³	B (14.7)	0.96 ³
3	Dike Access Road at I-5 NB ramps	RBT ¹	E	A (8.7)	0.59 ³	A (9.0)	0.62 ³	B (10.2)	0.70 ³
4	Guild Road at Schurman Way	TWSC ²	D	B (11.5) ³	0.19 ³	B (14.2) ³	0.26 ³	C (18.7) ³	0.34 ³
5	N Pekin Road at Guild Road/Scott Avenue	TWSC ²	D	B (11.6) ³	0.17 ³	B (12.7) ³	0.21 ³	B (14.8) ³	0.33 ³
6	N Pekin Road at Goerig Road	Yield	D	B (10.7) ³	0.03 ³	B (11.0) ³	0.05 ³	B (12.7) ³	0.06 ³
7	Davidson Street at S Pekin Road	TWSC ²	D	C (15.7) ³	0.12 ³	C (16.8) ³	0.17 ³	C (21.0) ³	0.42 ³
8	SR 503 (Lewis River Road) at I-5 SB Ramps/Pacific Avenue	Signal	D	C (25.6)	-- ⁴	C (25.7)	-- ⁴	C (25.8)	-- ⁴
9	SR 503 (Lewis River Road) at I-5 NB Ramps/Atlantic Avenue	Signal	D	D (43.3)	0.63	D (44.7)	0.67	D (46.6)	0.69
10	SR 503 (Lewis River Road) at CC Street	Signal	D	C (31.6)	0.57	C (32.5)	0.62	C (32.5)	0.63
11	Scott Avenue at I-5 SB off-ramp	TWSC ²	D	B (11.3) ³	0.17 ³	B (12.2) ³	0.27 ³	B (12.9) ³	0.33 ³
12	North Site Driveway at N Pekin Road	TWSC ²	D	--	--	--	--	B (10.1) ³	0.03 ³
13	Middle North Site Driveway at N Pekin Road	TWSC ²	D	--	--	--	--	B (9.6) ³	0.01 ³
14	Middle South Site Driveway at N Pekin Road	TWSC ²	D	--	--	--	--	B (9.6) ³	0.01 ³
15	South Site Driveway at N Pekin Road	TWSC ²	D	--	--	--	--	B (10.0) ³	0.15 ³
16	Guild Road at Rose Way	TWSC ²	D	--	--	--	--	A (9.3) ³	0.11 ³

1. RBT means roundabout
2. Two-Way Stop-Control
3. Worst level of average delay or worst V/C ratio
4. Intersection analyzed using 6th Edition HCM software which does not calculate overall v/c ratios.

Table 6 summarizes traffic queuing results for each study area intersection. With project results assume trip generation for an Industrial Park. Analysis worksheets are included in **Appendix E**.

Table 6. PM Peak Hour Intersection Traffic Queues

Intersection	Control Type	Vehicle Storage	Projected 2025		
			Base Year 2023	Without Project	With Industrial Park
			Queue	Queue	Queue
1	Dike Access Road at Schurman Way	RBT ¹			
	Westbound Thru	350 ft	70 ft	80 ft	85 ft
	Northbound All	240 ft	105 ft	140 ft	220 ft
2	Dike Access Road at I-5 SB ramps	RBT ¹			
	Eastbound Thru	300 ft	310 ft	405 ft	790 ft
	Southbound All	1,700 ft	40 ft	40 ft	40 ft
3	Dike Access Road at I-5 NB ramps	RBT ¹			
	Westbound Thru	300 ft	50 ft	55 ft	65 ft
	Northbound All	1,300 ft	90 ft	105 ft	140 ft
4	Guild Road at Schurman Way	TWSC ²			
	Southbound Left	100 ft	60 ft	65 ft	90 ft
5	N Pekin Road at Guild Road	TWSC ²			
	Northbound All	165 ft	70 ft	70 ft	80 ft
6	N Pekin Road at Goerig Road	Yield			
	Eastbound All	>1,000 ft	40 ft	40 ft	50 ft
7	Davidson Street at S Pekin Road	TWSC ²			
	Northbound All	250 ft	65 ft	65 ft	75 ft
8	SR 503 (Lewis River Road) at I-5 SB Ramps/Pacific Avenue	Signal			
	Southbound Thru	225 ft	580 ft	590 ft	895 ft
	Westbound Left	200 ft	220 ft	225 ft	245 ft
9	SR 503 (Lewis River Road) at I-5 NB Ramps/Atlantic Avenue	Signal			
	Northbound Thru/Left	1,150 ft	955 ft	880 ft	900 ft
	Eastbound Left	200 ft	240 ft	255 ft	240 ft
10	SR 503 (Lewis River Road) at CC Street	Signal			
	Northbound Left	>700 ft	305 ft	350 ft	315 ft
	Northbound Right	125 ft	185 ft	190 ft	195 ft
	Westbound Left	100 ft	185 ft	195 ft	195 ft
11	Scott Avenue at I-5 SB off-ramp	TWSC ²			
	Southbound Thru/Right	900 ft	10 ft	10 ft	10 ft
12	North Site Driveway at N Pekin Road	TWSC ²			
	Eastbound All	100 ft	--	--	40 ft
13	Middle North Site at N Pekin Road	TWSC ²			
	Eastbound All	100 ft	--	--	30 ft
14	Middle South Site at N Pekin Road	TWSC ²			
	Eastbound All	100 ft	--	--	30 ft
15	South Site Driveway at N Pekin Road	TWSC ²			
	Eastbound All	100 ft	--	--	60 ft
16	Guild Road at Rose Way	TWSC ²			
	Northbound All	>500 ft	--	--	55 ft

1. RBT means roundabout
2. Two-Way Stop-Control

6.2.1 Dike Access Road at Schurman Way

This is a four-legged intersection which currently operates as a single lane roundabout. The north leg serves the Wal-Mart and other smaller commercial developments while the east, west and south legs are public streets that provide a critical connection between the Schurman Way industrial area and the I-5 interchange at Dike Access Road. The intersection operates in close coordination with the I-5 southbound ramp intersection located about 350 feet to the east.

In the 2023 PM peak hour, the intersection operates at LOS A with 7.5 seconds of average delay per vehicle. For the 2025 horizon without the *TCC Woodland Industrial* project, the intersection is projected to operate at LOS A with 8.0 seconds of average delay. With the addition of industrial park traffic, the intersection is projected to remain at LOS A with 8.9 seconds of average delay. The westbound traffic queue is estimated at about 80 to 85 feet or equivalent to about three cars for both 2025 scenarios. The northbound traffic queue is expected to grow from about 105 feet in 2023 to 140 feet in 2025 without the project. With the addition of the industrial park, the northbound queue is expected to be about 220 feet long. All of these queues could be accommodated within the available storage.

6.2.2 Dike Access Road at I-5 SB Ramps

This is a four-legged intersection which currently operates as a single lane roundabout. The north leg serves as the southbound off-ramp from Interstate 5 while the south leg provides southbound access to the freeway. The east and west legs serve to connect the east and west sides of the city of Woodland and provide access to the freeway.

In the 2023 PM peak hour, the intersection operates at LOS A with 7.9 seconds of average delay per vehicle. For the 2025 horizon without the *TCC Woodland Industrial* project, the intersection is projected to operate at LOS A with 9.1 seconds of average delay. With the addition of industrial park traffic, the intersection is projected to remain at LOS A with 14.7 seconds of average delay. Eastbound traffic queues periodically exceed available storage between the southbound ramps and the intersection of Dike Access Road with Schurman Way for all scenarios. This will affect the operation of the Dike Access Road/Schurman Way intersection.

6.2.3 Dike Access Road at I-5 NB Ramps

This is a four-legged intersection which currently operates as a single lane roundabout. The north leg provides northbound access to Interstate 5 while the south leg serves as the southbound off-ramp from the freeway. The east and west legs serve to connect the east and west sides of the city of Woodland and provide access to the freeway.

In the 2023 PM peak hour, the intersection operates at LOS A with 8.7 seconds of average delay per vehicle. For the 2025 horizon without the *TCC Woodland Industrial* project, the intersection is projected to operate at LOS A with 9.0 seconds of average delay. With the addition of industrial park traffic, the intersection is projected to operate at LOS B with 10.2 seconds of average delay. Anticipated traffic queues for all scenarios are expected to be accommodated within available storage.

6.2.4 Guild Road at Schurman Way

This is a tee intersection with stop control on the side street (N Pekin Road). Both the southbound and eastbound approach legs of the intersection provides a single through travel lane and a left turn lane to accommodate all possible movements. In the 2023 PM peak hour, the worst movement at the

intersection (southbound left) operates at LOS B with 11.5 seconds of average delay per vehicle. In the 2025 PM peak hour with the project, the intersection is expected to operate at LOS B with 14.2 seconds of average delay. With the addition of industrial park traffic, the intersection is projected to drop to LOS C with 15.2 seconds of average delay. Anticipated traffic queues for all scenarios are expected to be accommodated within available storage.

6.2.5 N Pekin Road at Guild Road/Scott Avenue

This is a tee intersection with stop control on the side street (N Pekin Road). Each approach leg of the intersection provides a single travel lane to accommodate all possible movements.

In the 2023 PM peak hour, the intersection operates at LOS B with 11.6 seconds of average delay per vehicle. For the 2025 horizon without the *TCC Woodland Industrial* project, the intersection is projected to operate at LOS B with 12.7 seconds of average delay. With the addition of industrial park traffic, the intersection is projected to remain at LOS C with 19.8 seconds of average delay. Anticipated traffic queues for all scenarios are expected to be accommodated within available storage.

6.2.6 N Pekin Road at Goerig Road

This is a tee intersection with yield control on the side street (Goerig Road). Approaching the intersection, N Pekin Road makes a gradual and free movement either from southbound-to-eastbound or westbound-to-northbound with Goerig Road entering midway through the curve. Each approach leg of the intersection provides a single travel lane to accommodate all possible movements.

In the 2023 PM peak hour, the intersection operates at LOS B with 10.7 seconds of average delay per vehicle. For the 2025 horizon without the *TCC Woodland Industrial* project, the intersection is projected to operate at LOS B with 11.0 seconds of average delay. With the addition of industrial park traffic, the intersection is projected to remain at LOS B with 12.7 seconds of average delay. Anticipated traffic queues for all scenarios are expected to be accommodated within available storage.

6.2.7 Davidson Street at S Pekin Road (5th Street)

This is a four-legged intersection which currently operates with stop sign control on the side street (S Pekin Road/5th Street). Each approach leg provides a single travel lane that accommodates a full range of turn movements. There is a crosswalk on all legs of the intersection.

In the 2023 PM peak hour, the intersection operates at LOS C with 15.7 seconds of average delay per vehicle. For the 2025 horizon without the *TCC Woodland Industrial* project, the intersection is projected to operate at LOS C with 16.8 seconds of average delay. With the addition of industrial park traffic, the intersection is projected to remain at LOS C with 21.0 seconds of average delay. Anticipated traffic queues for all scenarios are expected to be accommodated within available storage.

6.2.8 SR 503(Lewis River Road) at Pacific Avenue/ I-5 Southbound On-Ramp

This is a four-legged intersection which currently operates under traffic signal control. The north, east and west legs provide for two directions of travel while the south leg serves as the southbound on-ramp to I-5. The westbound leg provides a separate travel lane for left turns, through movements and right turns. There is no pedestrian crossing on this leg. The eastbound leg provides for left turns, through movements and through/right movements. A crosswalk is provided on this leg. The southbound leg provides separate lanes for left and through movements and includes a crosswalk. Right turns split off before the intersection in their own lane.

In the 2023 PM peak hour, the intersection operates at LOS C with 25.6 seconds of average delay per vehicle. For the 2025 horizon without the *TCC Woodland Industrial* project, the intersection is projected to operate at LOS C with 25.7 seconds of average delay. With the addition of industrial park traffic, the intersection is projected to remain at LOS C with 25.8 seconds of average delay. Traffic queuing on two of the most critical legs is expected to exceed available storage under all scenarios. The southbound through movement on Pacific Avenue is expected to spillback between 580 and 780 feet, depending on scenario, causing queues to block several upstream intersections. The westbound left is also expected to slightly spill back out of available storage for all three scenarios including existing, 2025 without project and 2025 with industrial park.

6.2.9 SR 503(Lewis River Road) at Atlantic Avenue/I-5 Northbound Off-Ramp

This is a four-legged intersection which currently operates under traffic signal control. The north, east and west legs provide for two directions of travel while the south leg serves as the northbound off-ramp from I-5. The westbound leg provides separate through and through/right turn lanes. There is no pedestrian crossing on this leg. The eastbound leg provides a separate travel lane for left turns, through movements and through/right turns and includes a pedestrian crosswalk. The southbound leg includes separate left and right turns, as well as a crosswalk. The northbound leg provides two travel lanes, one for right turns only and the other a shared through/left turn lane.

In the 2023 PM peak hour, the intersection operates at LOS D with 43.3 seconds of average delay per vehicle. For the 2025 horizon without the *TCC Woodland Industrial* project, the intersection is projected to operate at LOS D with 44.7 seconds of average delay. With the addition of industrial park traffic, the intersection is projected to remain at LOS D with 46.6 seconds of average delay. PM peak hour traffic queues are not expected to adversely impact the I-5 northbound off-ramp; however, some impacts are expected in the eastbound left turn lane when one or two cars could spillback outside of the existing turn lane. It should be noted that an engineering study has recently begun which will confirm the desired improvements at this location which will help to mitigate any adverse impacts in the vicinity of the I-5/SR 503 (Exit 21) interchange.

6.2.10 SR 503 (Lewis River Road) at CC Street

This is a signal-controlled tee intersection that is closely coordinated with the signal at the intersection of Lewis River Road with the I-5 northbound off-ramp/Atlantic Avenue. The westbound leg provides separate lanes for left turns, through movements and through/right movements. The eastbound leg has two through lanes carried forward from the I-5 northbound off-ramp intersection. The northbound leg provides separate lanes for right and left turn movements.

In the 2023 PM peak hour, the intersection operates at LOS C with 31.6 seconds of average delay. For the 2025 horizon without the *TCC Woodland Industrial* project, the intersection is projected to operate at LOS C with 32.5 seconds of average delay. With the addition of industrial park traffic, the intersection is projected to remain at LOS C with 32.5 seconds of average delay. Traffic queues that exceed available storage are expected for all scenarios with westbound left turns and northbound right turns. While there is substantial storage for northbound lefts, the length of the right turn lane is insufficient to avoid some queue spillback into the left turn lane on occasion. The engineering study currently underway for Exit 21 will also address impact mitigation at this intersection.

6.2.11 Scott Avenue at I-5 SB off-ramp

This is a Tee intersection which currently operates under traffic signal control for the side street movement (Scott Avenue). The north leg operates as the southbound off-ramp from I-5 for the Exit 21 split diamond interchange, while the south leg is Pacific Avenue, a two-way frontage road on the west side of I-5 which connects the off-ramp to SR-503 and I-5 southbound access. Northbound traffic must turn left onto Scott Avenue to avoid wrong-way travel on the freeway. Eastbound Scott Avenue traffic must turn right onto Pacific Avenue. A single travel lane is provided on all approach legs.

In the 2023 PM peak hour, the intersection operates at LOS B with 11.3 seconds of average delay per vehicle. For the 2025 horizon without the *TCC Woodland Industrial* project, the intersection is projected to operate at LOS B with 12.2 seconds of average delay. With the addition of industrial park traffic, the intersection is projected to remain at LOS B with 12.9 seconds of average delay. Anticipated traffic queues for all scenarios are expected to be accommodated within available storage.

6.2.12 N Pekin Road at North Site Access Driveway

This is a future tee intersection with stop control on the side street (N Pekin Road). Each approach leg provides a single travel lane that accommodates a full range of turn movements. In the 2025 PM peak hour with the industrial park project, the intersection is expected to operate at LOS B with 11.3 seconds of average delay. Traffic queues of one or two vehicles are expected during the PM peak hour.

6.2.13 N Pekin Road at Middle North Site Access Driveway

This is a future tee intersection with stop control on the side street (N Pekin Road). Each approach leg provides a single travel lane that accommodates a full range of turn movements. In the 2025 PM peak hour with the industrial park project, the intersection is expected to operate at LOS B with 10.0 seconds of average delay. Traffic queues of one or two vehicles are expected during the PM peak hour.

6.2.14 N Pekin Road at Middle South Site Access Driveway

This is a future tee intersection with stop control on the side street (N Pekin Road). Each approach leg provides a single travel lane that accommodates a full range of turn movements. In the 2025 PM peak hour with the industrial park project, the intersection is expected to operate at LOS B with 10.0 seconds of average delay. Traffic queues of one or two vehicles are expected during the PM peak hour.

6.2.15 N Pekin Road at South Site Access Driveway

This is a future tee intersection with stop control on the side street (N Pekin Road). Each approach leg provides a single travel lane that accommodates a full range of turn movements. In the 2025 PM peak hour with the industrial park project, the intersection is expected to operate at LOS B with 11.2 seconds of average delay. Traffic queues of two or three vehicles are expected during the PM peak hour.

6.2.16 Guild Road at Rose Way

This is a future tee intersection with stop control on the side street (Rose Way). Each approach leg would provide a single travel lane that accommodates a full range of turn movements. In the 2025 PM peak hour with the industrial park project, the intersection is expected to operate at LOS A with 9.3 seconds of average delay. Traffic queues of about two vehicles are expected during the PM peak hour.

6.3 Comparison of Intersection Operations with General Light Industrial

The operational analysis results of the study intersections for the PM peak hour are based on the turning movement traffic projections illustrated in Figure 8. Analysis results are provided in **Table 7**. The LOS analysis worksheets are included in **Appendix D**.

Table 7. 2025 PM Peak Hour Comparison of Intersection Levels of Service

Intersection	Control Type	LOS Standard	Projected 2025						
			Without Project		With Industrial Park		With General Light Industrial		
			LOS (delay)	V/C Ratio	LOS (delay)	V/C Ratio	LOS (delay)	V/C Ratio	
1	Dike Access Road at Schurman Way	RBT ¹	E	A (8.0)	0.61 ³	A (8.9)	0.73 ³	B (11.3)	0.66 ³
2	Dike Access Road at I-5 SB ramps	RBT ¹	E	A (9.1)	0.86 ³	B (14.7)	0.96 ³	D (46.8)	1.06 ³
3	Dike Access Road at I-5 NB ramps	RBT ¹	E	A (9.0)	0.62 ³	B (10.2)	0.70 ³	B (12.3)	0.79 ³
4	Guild Road at Schurman Way	TWSC ²	D	B (4.2) ³	0.26 ³	C (15.2) ³	0.29 ³	D (27.3) ³	0.46 ³
5	N Pekin Road at Guild Road/Scott Avenue	TWSC ²	D	B (2.7) ³	0.21 ³	B (14.8) ³	0.56 ³	C (18.1) ³	0.48 ³
6	N Pekin Road at Goerig Road	Yield	D	B (11.0) ³	0.05 ³	B (12.7) ³	0.06 ³	B (14.8) ³	0.07 ³
7	Davidson Street at S Pekin Road	TWSC ²	D	C (16.8) ³	0.17 ³	C (21.0) ³	0.42 ³	D (27.4) ³	0.53 ³
8	SR 503 (Lewis River Road) at I-5 SB Ramps/Pacific Avenue	Signal	D	C (25.7)	-- ⁴	C (25.8)	-- ⁴	C (23.3)	-- ⁴
9	SR 503 (Lewis River Road) at I-5 NB Ramps/Atlantic Avenue	Signal	D	D (44.7)	0.67	D (46.6)	0.69	D (47.3)	0.70
10	SR 503 (Lewis River Road) at CC Street	Signal	D	C (32.5)	0.62	C (32.5)	0.63	C (32.1)	0.65
11	Scott Avenue at I-5 SB off-ramp	TWSC ²	D	B (12.2) ³	0.27	B (12.9) ³	0.33 ³	B (13.7) ³	0.39 ³
12	North Site Driveway at N Pekin Road	TWSC ²	D	--	--	B (10.1) ³	0.03 ³	B (10.7) ³	0.11 ³
13	Middle North Site Driveway at N Pekin Road	TWSC ²	D	--	--	B (9.6) ³	0.01 ³	B (9.6) ³	0.01 ³
14	Middle South Site Driveway at N Pekin Road	TWSC ²	D	--	--	B (9.6) ³	0.01 ³	B (9.6) ³	0.01 ³
15	South Site Driveway at N Pekin Road	TWSC ²	D	--	--	B (10.0) ³	0.15 ³	B (10.7) ³	0.28 ³
16	Guild Road at Rose Way	TWSC ²	D	--	--	A (9.3) ³	0.11 ³	A (9.9) ³	0.23

1. RBT means roundabout
2. Two-Way Stop-Control
3. Worst level of average delay or worst V/C ratio
4. Intersection analyzed using 6th Edition HCM software which does not calculate overall v/c ratios.

Table 8 summarizes traffic queuing results with General Light Industrial in comparison to results from Table 7 for Industrial Park for each study area intersection. Details are in **Appendix E**.

Table 8. 2025 PM Peak Hour Comparison of Industrial Park and General Light Industrial Queues

Intersection	Control Type	Vehicle Storage	Projected 2025		
			Without Project	With Industrial Park	With General Light Industrial
			Queue	Queue	Queue
1	Dike Access Road at Schurman Way	RBT ¹			
	Westbound Thru	300 ft	80 ft	85 ft	90 ft
	Northbound All	240 ft	140 ft	220 ft	390 ft
2	Dike Access Road at I-5 SB ramps	RBT ¹			
	Eastbound Thru	350 ft	405 ft	790 ft	1,970 ft
	Southbound All	1,700 ft	40 ft	40 ft	40 ft
3	Dike Access Road at I-5 NB ramps	RBT ¹			
	Westbound Thru	300 ft	55 ft	65 ft	75 ft
	Northbound All	1,300 ft	105 ft	140 ft	205 ft
4	Guild Road at Schurman Way	TWSC ²			
	Southbound Left	100 ft	65 ft	90 ft	90 ft
5	N Pekin Road at Guild Road/Scott Avenue	TWSC ²			
	Northbound All	165 ft	70 ft	80 ft	100 ft
6	N Pekin Road at Goerig Road	Yield			
	Eastbound All	>1,000 ft	40 ft	50 ft	45 ft
7	Davidson Street at S Pekin Road	TWSC ²			
	Northbound All	250 ft	65 ft	75 ft	85 ft
8	SR 503 (Lewis River Road) at I-5 SB Ramps/Pacific Avenue	Signal			
	Southbound Thru	225 ft	590 ft	895 ft	1,140 ft
	Westbound Left	200 ft	225 ft	245 ft	260 ft
9	SR 503 at I-5 NB Ramps/Atlantic Avenue	Signal			
	Northbound Thru/Left	1,150 ft	880 ft	900 ft	925 ft
	Eastbound Left	200 ft	255 ft	240 ft	255 ft
10	SR 503 at CC Street	Signal			
	Northbound Left	>700 ft	350 ft	315 ft	360 ft
	Northbound Right	125 ft	190 ft	195 ft	190 ft
	Westbound Left	100 ft	195 ft	195 ft	195 ft
11	Scott Avenue at I-5 SB off-ramp	TWSC ²			
	Southbound Thru/Right	900 ft	10 ft	10 ft	10 ft
12	North Site Driveway at N Pekin Road	TWSC ²			
	Eastbound All	400 ft	--	40 ft	55 ft
13	Middle North Site at N Pekin Road	TWSC ²			
	Eastbound All	50 ft	--	30 ft	30 ft
14	Middle South Site at N Pekin Road	TWSC ²			
	Eastbound All	50 ft	--	30 ft	35 ft
15	South Site Driveway at N Pekin Road	TWSC ²			
	Eastbound All	400 ft	--	60 ft	75 ft
16	Guild Road at Rose Way	TWSC ²			
	Northbound All	>500 ft	--	55 ft	65 ft

1. RBT means roundabout
2. Two-Way Stop-Control

As shown in Tables 7 and 8 there are few substantive differences between intersection operational performance and expected traffic queueing between the industrial park development and the potential general light industrial development. Key differences include the following:

- The expected 2025 PM peak hour level of service at the intersection of N Pekin Road with Guild Road/Scott Avenue is expected to operate at LOS B without the project or with the proposed industrial park development. Operations are expected to drop to LOS C with the general light industrial land use. These changes are primarily related to the increase in westbound traffic from the I-5 southbound off-ramp at Scott Avenue which is traveling to the project site and the increase in northbound traffic exiting the project site.
- Northbound traffic on Schurman Way approaching the roundabout at Dike Access Road is expected to spill back beyond the first street intersection with the general light industrial land use. This is not expected to occur with the industrial park.
- Eastbound through traffic on Dike Access Road is expected to spill back from the I-5 southbound ramp to (and through) the intersection with Schurman Way with all scenarios. However, the impact of the general light industrial land use is substantially higher than with the light industrial land use equating to nearly a 2,000 foot queue.
- Southbound through traffic on Pacific Avenue approaching the intersection with SR 503 at the I-5 southbound on-ramp is expected to spill back beyond available storage for all scenarios. The impacts of this spill back would be slightly longer (about 300 feet) with the industrial park land use in comparison with the no project scenario. However, there would be about 550 more feet of traffic queue with the general light industrial land use.

6.4 Safety Analysis

As noted in Chapter 3, there were a total of 71 crashes at study area intersections over the five year analysis period (2018 to 2022). There were no fatalities and only one serious injury crash was reported at the intersection of N Pekin Road at Goerig Road. Approximately 80 percent of all the reported crashes were classified as property damage only (with no apparent injury).

6.4.1 Existing Intersection Safety Analysis

During the traffic study scoping process, WSDOT requested that predictive intersection safety analysis be conducted at the two I-5 interchanges serving the project area. That analysis is presented in this section.

An analysis of the existing safety performance conditions was performed using the Highway Safety Manual (HSM) Freeway Model as presented by the Interchange Safety Analysis Tool enhanced (ISATe) spreadsheet. The ISATe spreadsheet incorporates the Highway Safety Manuals Part C predictive methods and is used to evaluate the safety performance of freeway facilities. It is based on research that quantified the relationship between various design elements or design components and average crash frequency.

The predicted crashes for a facility similar to the study interchange termini can also be calculated using the ISATe tool. The ISATe tool can calculate the “expected” crashes for the study interchange termini using existing geometry and crash history. The expected crash data (which represents the facility undergoing evaluation) can be compared to the “predicted” crash data of similar facilities to determine

if there are any existing safety concerns that appear to be out of the ordinary. If the expected crash totals exceed that of a similar facility, then the study segment would not be considered to be performing as safely as predicted.

It should be noted that the ISATe modeling does not support analysis of roundabout traffic control. For the Exit 22 interchange termini, which both operate under single-lane roundabout control, traffic signal control was used in the modeling. The ISATe results have not been adjusted since the comparison of results from the ISATe model still provide a meaningful delta. However, in comparison to the actual crash experience at those locations, the ISATe results should be considered high as single-lane roundabout control is a proven safety countermeasure that would significantly reduce the probability of crashes.

As shown in **Table 9**, expected crashes are greater than predicted crashes for similar facilities at the Exit 21 interchange, indicating that the crash experience there is higher than what would be expected given the geometric and traffic volume data. For Exit 22 the expected crashes are lower than, which makes sense given that the interchange actually operates under single-lane roundabout control, which is safer than the traffic signal control being assumed in the ISATe model. The ISATe inputs and outputs are provided in **Appendix B**.

Table 9. Existing 2023 ISATe Analysis Results for Study Locations (Annual Crashes)

Interchange Termini	Predicted Crashes (Similar Facilities)	Expected Crashes (Study Facilities)
Exit 22 SB Ramps	3.25	2.29
Exit 22 NB Ramps	2.60	1.28
Exit 21 SB Off-Ramp – Scott Avenue	0.44	0.34
Exit 21 SB Ramps	2.32	2.63
Exit 21 NB Ramps	2.85	4.19
Totals	11.46	10.73

6.4.2 Predicted 2025 Intersection Safety Analysis

The primary value of the ISATe model is being able to evaluate the predicted safety performance of freeway facilities into the future. For this study each of the interchange termini have been evaluated for the projected 2025 volume horizon without the project, with the project as an industrial park, and with the project as general light industrial. It should be noted that for this analysis only the daily volumes have been changed, while all geometric inputs match the existing conditions. The predicted crash results are provided in **Table 10**.

Table 10. Predicted 2025 ISATe Analysis Results for Study Locations (Annual Crashes)

Interchange Termini	Without Project	With Industrial Park	With General Light Industrial
Exit 22 SB Ramps	3.46	3.75	4.07
Exit 22 NB Ramps	2.77	3.07	3.40
Exit 21 SB Off-Ramp – Scott Avenue	0.52	0.62	0.66
Exit 21 SB Ramps	2.58	2.94	3.34
Exit 21 NB Ramps	3.09	3.18	3.22
Totals	12.42	13.56	14.69

Based on the influence of increased daily volumes generated by the growth in background and pipeline traffic study locations are predicted to increase annual crashes by about two vehicles (from 10.43 in 2023 to 12.42 in 2025). With the addition of project traffic from the proposed industrial park land use, the project is predicted to result in approximately one additional crash per year across all of the study interchange termini. Were the project to develop as a general light industrial site, it would be predicted to result in an additional one crash per year. It should be noted that this additional crash frequency is predicted to fall primary in the property damage only category and the serious/fatal crash types are predicted to increase by 0.1 for both project intensities.

6.4.3 Sight Distance Analysis

Based on posted travel speed of 35 mph, the intersections of N Pekin Road with the project driveways should have an entering sight distance requirement of 390 feet for left turns (to the right) and 335 feet for right turns (to the left) for the typical vehicle. Street level review indicates that there is approximately 500 feet of sight distance to the north to the intersection with Guild Road which is sufficient to meet the required 335 feet of sight distance for right turns. There is about 800 feet of sight distance to the south which is sufficient to meet the 390-foot requirement for left turns.

6.5 Street and Intersection Improvements

Based on the analysis presented in Chapter 5, no adverse intersection-related traffic impacts are anticipated with development of the project site either for an Industrial Park or for general light industrial uses. Selected traffic queues in the vicinity of the two I-5 interchanges are expected to be longer with the addition of project traffic but these would not cause average delay to drop below acceptable standards nor would the anticipated traffic queues adversely impact traffic exiting I-5 in any direction. Accordingly, no intersection impact mitigation is proposed or recommended.

Several improvements to the local existing and future street system in the vicinity of the project are anticipated. These would include:

- Construction of half-width improvements along the project frontage on N Pekin Road in conjunction with the four new driveways that would serve the site. These improvements would be constructed to full urban standard to include street, curb/gutter, sidewalk, landscaping, and illumination and would serve the driveways proposed for development on the east side of the project site.

- Construction of half-width improvements along the future alignment of Rose Way south of the Port's pending project that would involve construction of a similar improvement south from Guild Road to the *TCC Woodland Industrial* site. The eastern half of the new roadway would be constructed to full urban standard to include street, curb/gutter, sidewalk, landscaping, and illumination and would serve the driveways proposed for development on the west side of the project site. The western half of the new roadway would be leveled and surfaced with gravel to facilitate truck turning movements into and out of the project site. It is anticipated that this improvement between the project site and Guild Road would be in place by opening day in 2025.

In addition to providing the street improvements listed above, the project will also pay the required Traffic Impact Fees as identified based on the proposed land use. These fees will be calculated on consultation with the City of Woodland.

This page intentionally blank.

7 Summary and Mitigation

The *TCC Woodland Industrial* project will consist of two industrial buildings totaling approximately 925,180 square feet located at 345 N Pekin Road in Woodland, Washington. These buildings would be situated on approximately 67.49 acres of undeveloped land. Access to and from the project site is proposed to be via four driveways on N Pekin Road that would serve both auto and truck uses connecting to appropriate parking facilities and truck loading docks. Driveways along N Pekin Road would primarily serve Building B, the smaller of the two buildings proposed for construction on the site. The southern driveway would also provide access for Building A which is oriented north/south in the western portion of the property.

Building A would also have access to the transportation system via five driveways on Rose Way as that facility would be connected to the larger community transportation system by the anticipated project opening year of 2025. It is anticipated that the project will construct an urban half-width improvement along Rose Way providing full site access and circulation. Ultimately Rose Way will be extended further to the north and south with connections to Guild Road on the north and Caples Road on the south. The project is proposed to have a total of 546 auto parking spaces and 182 trailer parking spaces with 191 truck docks.

The site could be developed for industrial park or general light industrial uses depending on the needs of the ultimate tenant. For purposes of this Traffic Impact Analysis, analysis of both land use types have been considered with general light industrial representing the maximum potential site impact.

At full occupancy and operation, the project is estimated to generate approximately 315 net new trip ends during the PM peak hour with the industrial park or 601 net new PM peak hour trip ends with the general light industrial land use. Based on the analysis described in this report, all the study area intersections are projected to operate at or better than the established intersection level of service standards. Accordingly, no impact mitigation is recommended.

The project will include frontage improvements along the existing portion of N Pekin Road adjacent to the TCC property and a half width improvement along an extension of Rose Way south from the roadway segment that is being developed by the Port of Woodland between Guild Road and the TCC site. Additionally, it is expected that the proposed *TCC Woodland Industrial* project will pay the identified City of Woodland traffic impact fees.

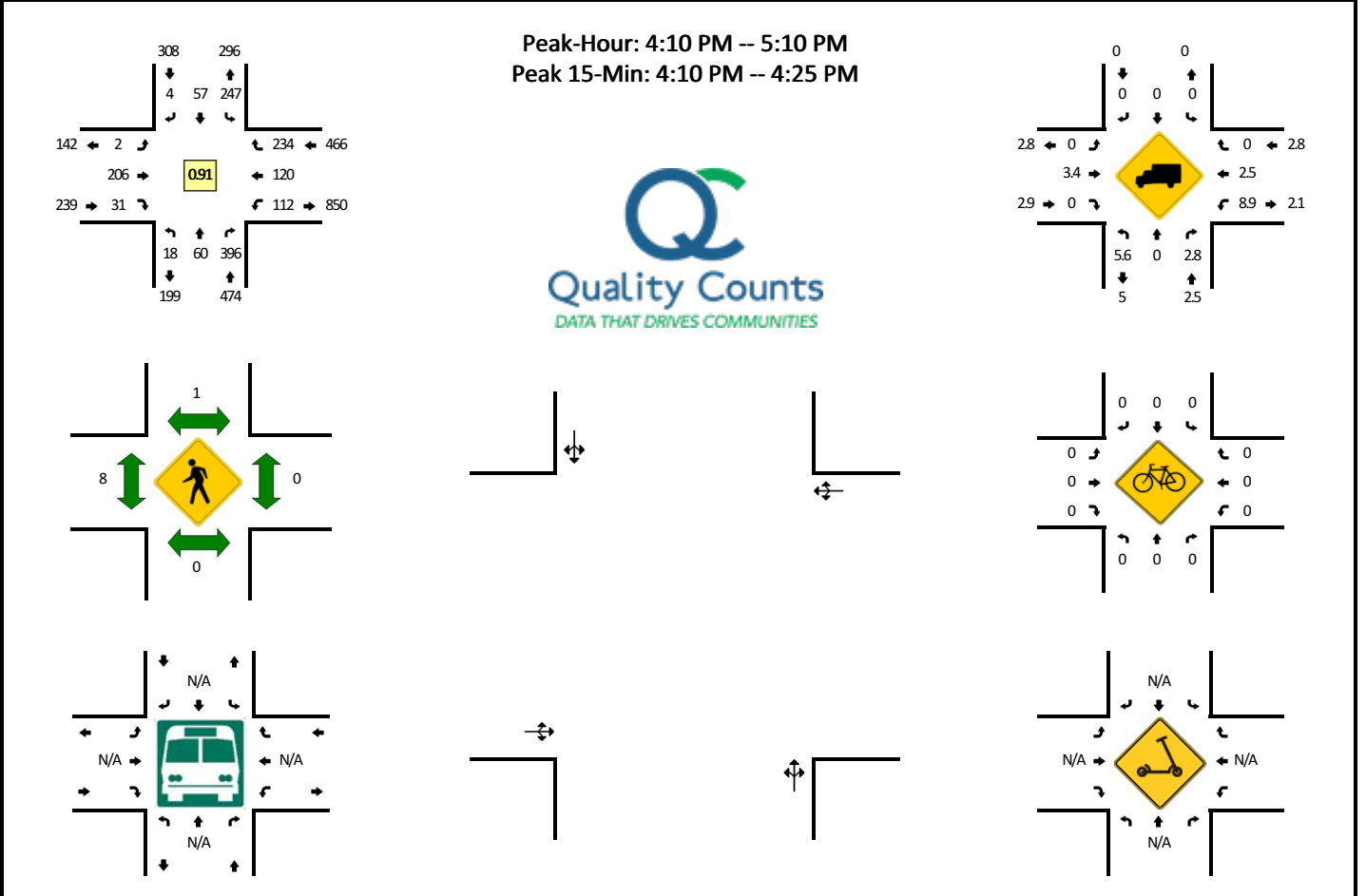
This page intentionally left blank.

Appendix A

Traffic Count Data

LOCATION: Schurman Wy -- Dike Access Rd (roundabout)
CITY/STATE: Woodland, WA

QC JOB #: 16208301
DATE: Wed, May 17 2023

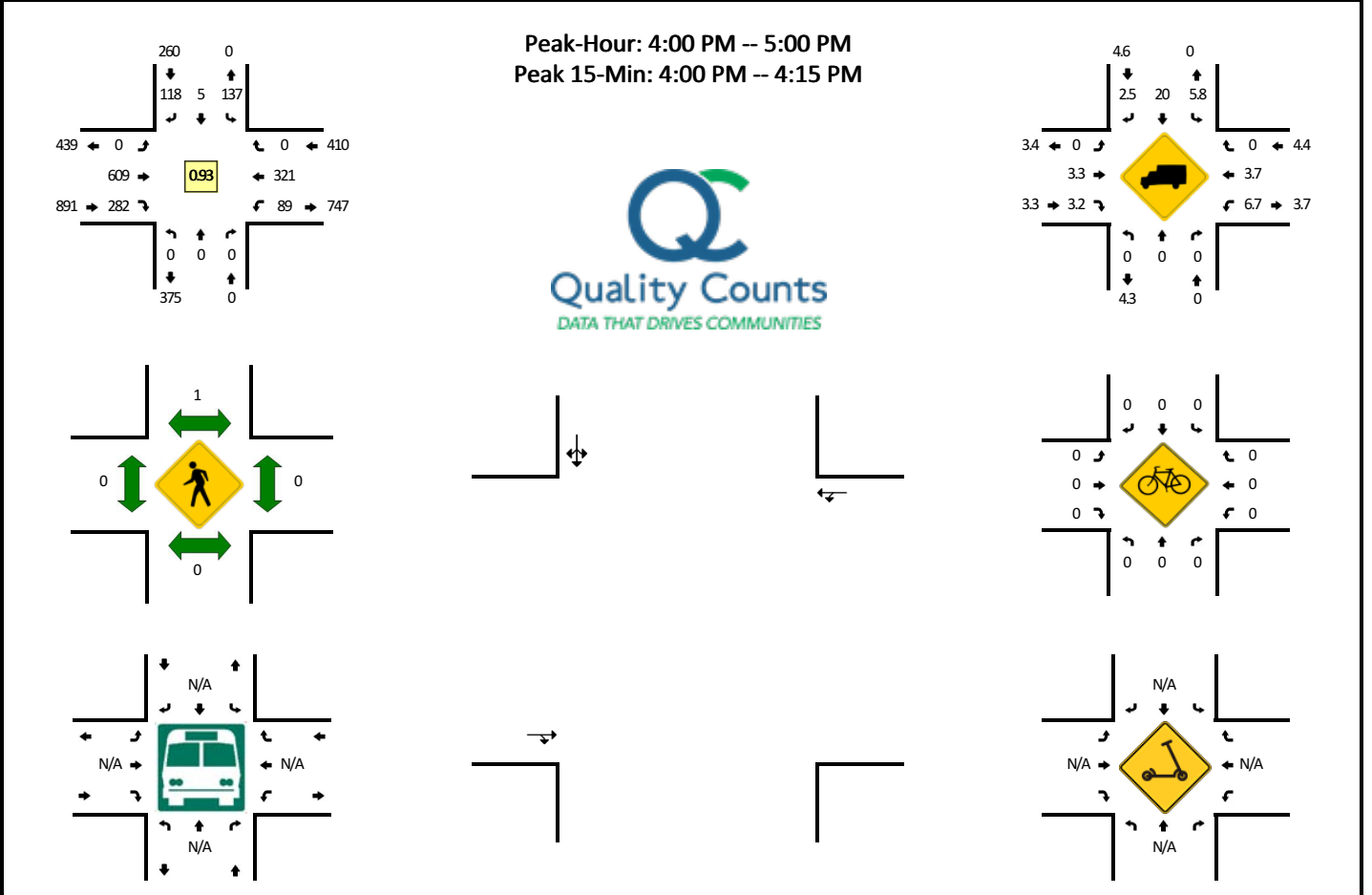


5-Min Count Period Beginning At	Schurman Wy (Northbound)				Schurman Wy (Southbound)				Dike Access Rd (roundabout) (Eastbound)				Dike Access Rd (roundabout) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	2	40	0	26	3	0	0	0	25	2	0	9	11	14	1	133	
4:05 PM	0	5	36	0	23	3	0	0	0	25	1	0	8	1	9	0	111	
4:10 PM	1	8	32	0	24	1	0	0	0	29	0	0	10	13	24	0	142	
4:15 PM	0	4	29	0	29	5	0	0	0	34	3	0	9	6	24	0	143	
4:20 PM	0	7	42	0	18	8	1	0	0	13	2	0	4	6	21	0	122	
4:25 PM	1	3	25	0	19	2	1	0	0	17	2	0	6	12	14	0	102	
4:30 PM	0	5	35	0	19	4	0	0	0	16	1	0	8	18	17	0	123	
4:35 PM	2	5	39	0	19	4	0	0	0	14	1	0	14	7	22	0	127	
4:40 PM	0	6	38	0	20	8	0	0	0	9	2	0	9	11	24	0	127	
4:45 PM	4	5	33	0	19	5	0	0	1	10	3	0	16	11	20	0	127	
4:50 PM	3	5	28	0	13	3	1	0	1	15	5	0	6	9	20	0	109	
4:55 PM	4	2	28	0	30	3	0	0	0	15	3	0	6	8	12	0	111	
5:00 PM	1	3	30	0	16	7	1	0	0	15	5	0	13	12	17	0	120	1477
5:05 PM	2	7	37	0	21	7	0	0	0	19	4	0	10	7	19	1	134	1464
5:10 PM	1	5	39	0	10	3	0	0	0	18	4	0	8	4	15	0	107	1487
5:15 PM	2	6	37	0	22	0	0	0	0	13	6	0	9	6	12	1	114	1452
5:20 PM	2	2	12	0	19	5	0	0	1	11	3	0	8	5	23	0	91	1392
5:25 PM	3	4	21	0	15	5	0	0	0	13	1	0	11	12	14	0	99	1389
5:30 PM	5	2	19	0	28	2	0	0	2	18	2	0	6	8	22	0	114	1380
5:35 PM	4	5	26	0	20	0	0	0	0	13	4	0	12	6	27	0	117	1370
5:40 PM	2	3	16	0	15	8	0	1	0	9	3	0	5	9	18	1	90	1333
5:45 PM	2	3	17	0	11	4	0	0	0	18	6	0	8	13	16	0	98	1304
5:50 PM	0	0	24	1	15	3	0	0	0	15	4	0	9	12	18	0	101	1296
5:55 PM	7	2	21	0	18	1	1	0	0	11	4	0	7	10	15	1	98	1283
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	4	76	412	0	284	56	4	0	0	304	20	0	92	100	276	0	1628	
Heavy Trucks	0	0	8	0	0	0	0	0	0	12	0	0	8	4	0	0	32	
Buses																		
Pedestrians		0				4				0				0			4	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: I-5 SB ramps -- Dike Access Rd (roundabout)
CITY/STATE: Woodland, WA

QC JOB #: 16208302
DATE: Wed, May 17 2023

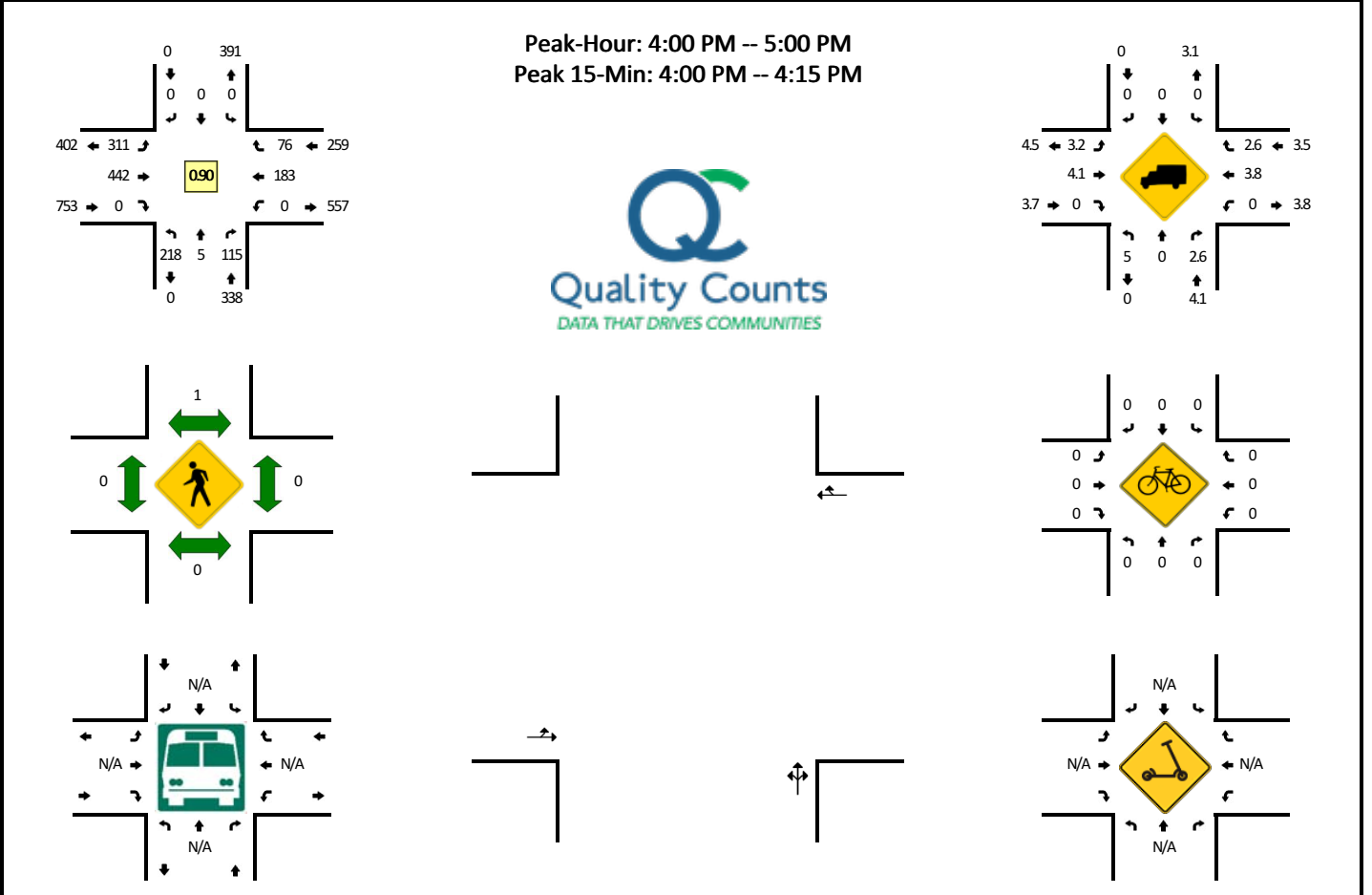


5-Min Count Period Beginning At	I-5 SB ramps (Northbound)				I-5 SB ramps (Southbound)				Dike Access Rd (roundabout) (Eastbound)				Dike Access Rd (roundabout) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	9	2	4	0	0	64	28	0	8	30	0	1	146	
4:05 PM	0	0	0	0	14	0	10	0	0	65	19	0	4	17	0	0	129	
4:10 PM	0	0	0	0	11	0	7	0	0	68	19	0	4	35	0	0	144	
4:15 PM	0	0	0	0	5	1	9	0	0	54	39	0	9	24	0	0	141	
4:20 PM	0	0	0	0	8	1	11	0	0	50	25	0	12	23	0	0	130	
4:25 PM	0	0	0	0	16	0	7	0	0	42	17	0	7	23	0	0	112	
4:30 PM	0	0	0	0	9	0	13	0	0	43	25	0	8	33	0	0	131	
4:35 PM	0	0	0	0	15	1	19	0	0	38	29	0	7	25	0	0	134	
4:40 PM	0	0	0	0	16	0	10	0	0	55	15	0	12	29	0	0	137	
4:45 PM	0	0	0	0	10	0	13	0	0	43	23	0	9	35	0	0	133	
4:50 PM	0	0	0	0	12	0	8	0	0	40	15	0	5	28	0	0	108	
4:55 PM	0	0	0	0	12	0	7	0	0	47	28	0	3	19	0	0	116	1561
5:00 PM	0	0	0	0	9	0	9	0	0	43	19	0	6	33	0	0	119	1534
5:05 PM	0	0	0	0	13	0	8	0	0	40	36	0	7	30	0	1	135	1540
5:10 PM	0	0	0	0	15	0	5	0	0	49	22	0	4	19	0	0	114	1510
5:15 PM	0	0	0	0	16	0	9	0	0	45	28	0	4	20	0	0	122	1491
5:20 PM	0	0	0	0	14	1	13	0	0	32	10	0	5	23	0	0	98	1459
5:25 PM	0	0	0	0	15	0	12	0	0	35	13	0	5	24	0	0	104	1451
5:30 PM	0	0	0	0	13	0	13	0	0	43	19	0	9	27	0	0	124	1444
5:35 PM	0	0	0	0	12	0	9	0	0	46	17	0	5	33	0	0	122	1432
5:40 PM	0	0	0	0	10	0	4	0	0	28	10	0	4	29	0	0	85	1380
5:45 PM	0	0	0	0	18	0	11	0	0	31	19	0	7	30	0	0	116	1363
5:50 PM	0	0	0	0	15	0	7	0	0	36	17	0	6	29	0	0	110	1365
5:55 PM	0	0	0	0	12	0	11	0	0	39	12	0	3	22	0	0	99	1348
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	136	8	84	0	0	788	264	0	64	328	0	4	1676	
Heavy Trucks	0	0	0	0	20	4	4	0	0	36	12	0	8	24	0	0	108	
Buses																	0	
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																	0	

Comments:

LOCATION: I-5 NB ramps -- Dike Access Rd (roundabout)
CITY/STATE: Woodland, WA

QC JOB #: 16208303
DATE: Wed, May 17 2023

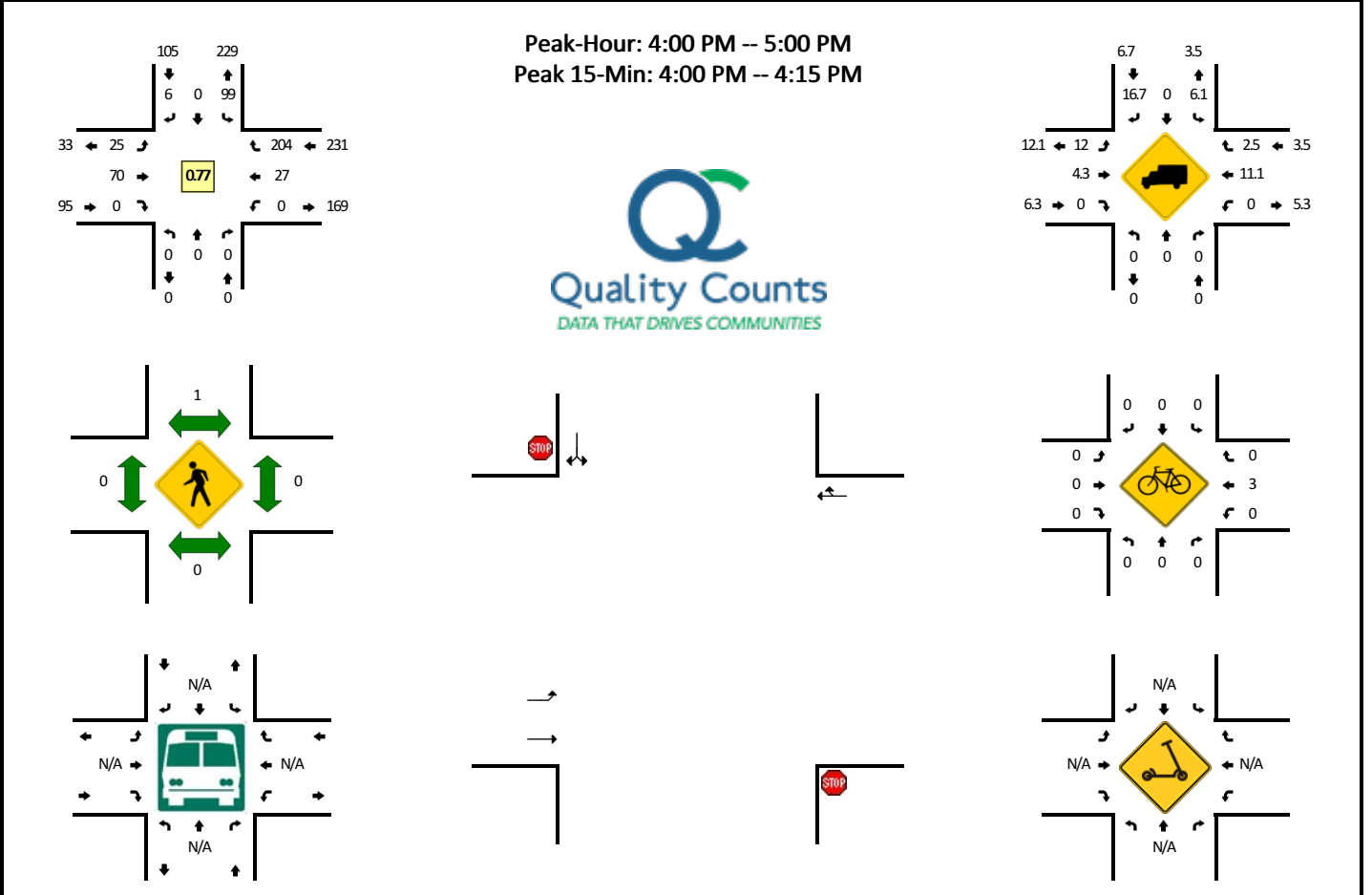


5-Min Count Period Beginning At	I-5 NB ramps (Northbound)				I-5 NB ramps (Southbound)				Dike Access Rd (roundabout) (Eastbound)				Dike Access Rd (roundabout) (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	11	0	9	0	0	0	0	0	22	52	0	0	0	25	10	0	129	
4:05 PM	12	0	9	0	0	0	0	0	35	45	0	0	0	11	8	0	120	
4:10 PM	24	0	6	0	0	0	0	0	25	53	0	0	0	16	3	0	127	
4:15 PM	13	1	5	0	0	0	0	0	31	31	0	0	0	14	8	0	103	
4:20 PM	19	0	9	0	0	0	0	0	26	31	0	0	0	18	7	0	110	
4:25 PM	23	1	6	0	0	0	0	0	23	37	0	0	0	8	7	0	105	
4:30 PM	23	1	9	0	0	0	0	0	25	26	0	0	0	15	7	0	106	
4:35 PM	19	0	10	0	0	0	0	0	25	29	0	0	0	19	8	0	110	
4:40 PM	17	0	9	0	0	0	0	0	33	36	0	1	0	19	6	0	121	
4:45 PM	26	0	9	0	0	0	0	0	26	27	0	0	0	18	5	0	111	
4:50 PM	21	2	12	0	0	0	0	0	16	37	0	0	0	8	5	0	101	
4:55 PM	10	0	22	0	0	0	0	0	23	38	0	0	0	12	2	0	107	1350
5:00 PM	24	0	12	0	0	0	0	0	17	32	0	0	0	21	10	0	116	1337
5:05 PM	12	0	15	0	0	0	0	0	22	30	0	2	0	19	6	0	106	1323
5:10 PM	17	0	13	0	0	0	0	0	25	36	0	1	0	6	5	0	103	1299
5:15 PM	10	0	11	0	0	0	0	0	21	44	0	0	0	13	7	0	106	1302
5:20 PM	12	0	10	0	0	0	0	0	18	28	0	0	0	16	8	0	92	1284
5:25 PM	15	0	10	0	0	0	0	0	22	27	0	0	0	16	5	0	95	1274
5:30 PM	22	1	8	0	0	0	0	0	18	37	0	0	0	16	5	0	107	1275
5:35 PM	18	2	7	0	0	0	0	0	20	41	0	0	0	15	7	0	110	1275
5:40 PM	16	0	10	0	0	0	0	0	16	21	0	0	0	20	10	0	93	1247
5:45 PM	14	0	5	0	0	0	0	0	10	38	0	0	0	23	10	0	100	1236
5:50 PM	15	0	8	0	0	0	0	0	17	34	0	1	0	20	2	0	97	1232
5:55 PM	11	0	7	0	0	0	0	0	22	27	0	0	0	12	4	0	83	1208
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	188	0	96	0	0	0	0	0	328	600	0	0	0	208	84	0	1504	
Heavy Trucks	16	0	0	0	0	0	0	0	0	56	0	0	0	16	0	0	88	
Buses																	0	
Pedestrians		0			0					0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																	0	

Comments:

LOCATION: Schurman Wy -- Guild Rd
CITY/STATE: Woodland, WA

QC JOB #: 16208304
DATE: Wed, May 17 2023

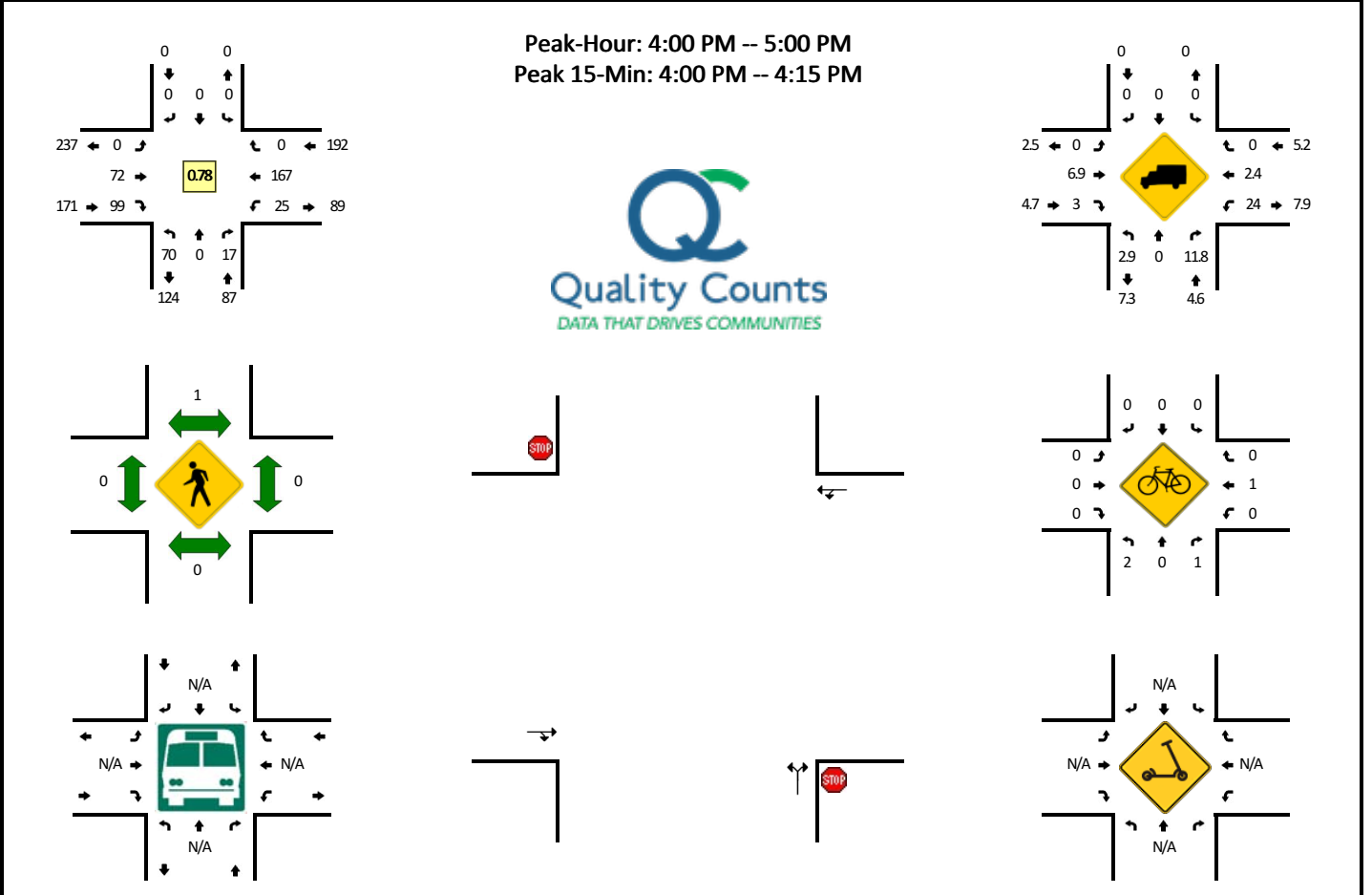


5-Min Count Period Beginning At	Schurman Wy (Northbound)				Schurman Wy (Southbound)				Guild Rd (Eastbound)				Guild Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	10	0	0	0	2	32	0	0	0	2	13	0	59	
4:05 PM	0	0	0	0	9	0	2	0	2	9	0	0	0	3	19	0	44	
4:10 PM	0	0	0	0	10	0	0	0	1	6	0	0	0	6	14	0	37	
4:15 PM	0	0	0	0	6	0	0	0	1	6	0	0	0	2	14	0	29	431
4:20 PM	0	0	0	0	10	0	1	0	3	2	0	0	0	2	11	0	29	
4:25 PM	0	0	0	0	2	0	0	0	2	5	0	0	0	1	17	0	27	
4:30 PM	0	0	0	0	9	0	0	0	3	1	0	0	0	3	27	0	43	
4:35 PM	0	0	0	0	6	0	1	0	1	3	0	0	0	1	24	0	36	
4:40 PM	0	0	0	0	13	0	1	0	3	2	0	0	0	2	14	0	35	
4:45 PM	0	0	0	0	10	0	0	0	1	2	0	0	0	1	24	0	38	
4:50 PM	0	0	0	0	7	0	0	0	5	1	0	0	0	2	10	0	25	
4:55 PM	0	0	0	0	7	0	1	0	1	1	0	0	0	2	17	0	29	
5:00 PM	0	0	0	0	8	0	0	0	1	1	0	0	0	1	12	0	23	
5:05 PM	0	0	0	0	11	0	1	0	0	1	0	0	0	4	25	0	42	393
5:10 PM	0	0	0	0	7	0	0	0	1	1	0	0	0	3	21	0	33	389
5:15 PM	0	0	0	0	6	0	0	0	2	0	0	0	0	3	19	0	30	390
5:20 PM	0	0	0	0	7	0	0	0	1	0	0	0	0	3	16	0	27	388
5:25 PM	0	0	0	0	6	0	2	0	1	1	0	0	0	1	13	0	24	385
5:30 PM	0	0	0	0	5	0	0	0	1	0	0	0	0	1	17	0	24	366
5:35 PM	0	0	0	0	7	0	0	0	1	0	0	0	0	1	14	0	23	353
5:40 PM	0	0	0	0	8	0	0	0	0	0	0	0	0	2	13	0	23	341
5:45 PM	0	0	0	0	9	0	0	0	0	1	0	0	0	0	12	0	22	325
5:50 PM	0	0	0	0	5	0	3	0	0	0	0	0	0	2	16	0	26	326
5:55 PM	0	0	0	0	9	0	0	0	0	2	0	0	0	3	10	0	24	321
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	116	0	8	0	20	188	0	0	0	44	184	0	560	
Heavy Trucks	0	0	0	0	12	0	4	0	4	8	0	0	0	4	0	0	32	
Buses																	0	
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																	0	

Comments:

LOCATION: N Pekin Rd -- Guild Rd/Scott Ave
CITY/STATE: Woodland, WA

QC JOB #: 16208305
DATE: Wed, May 17 2023

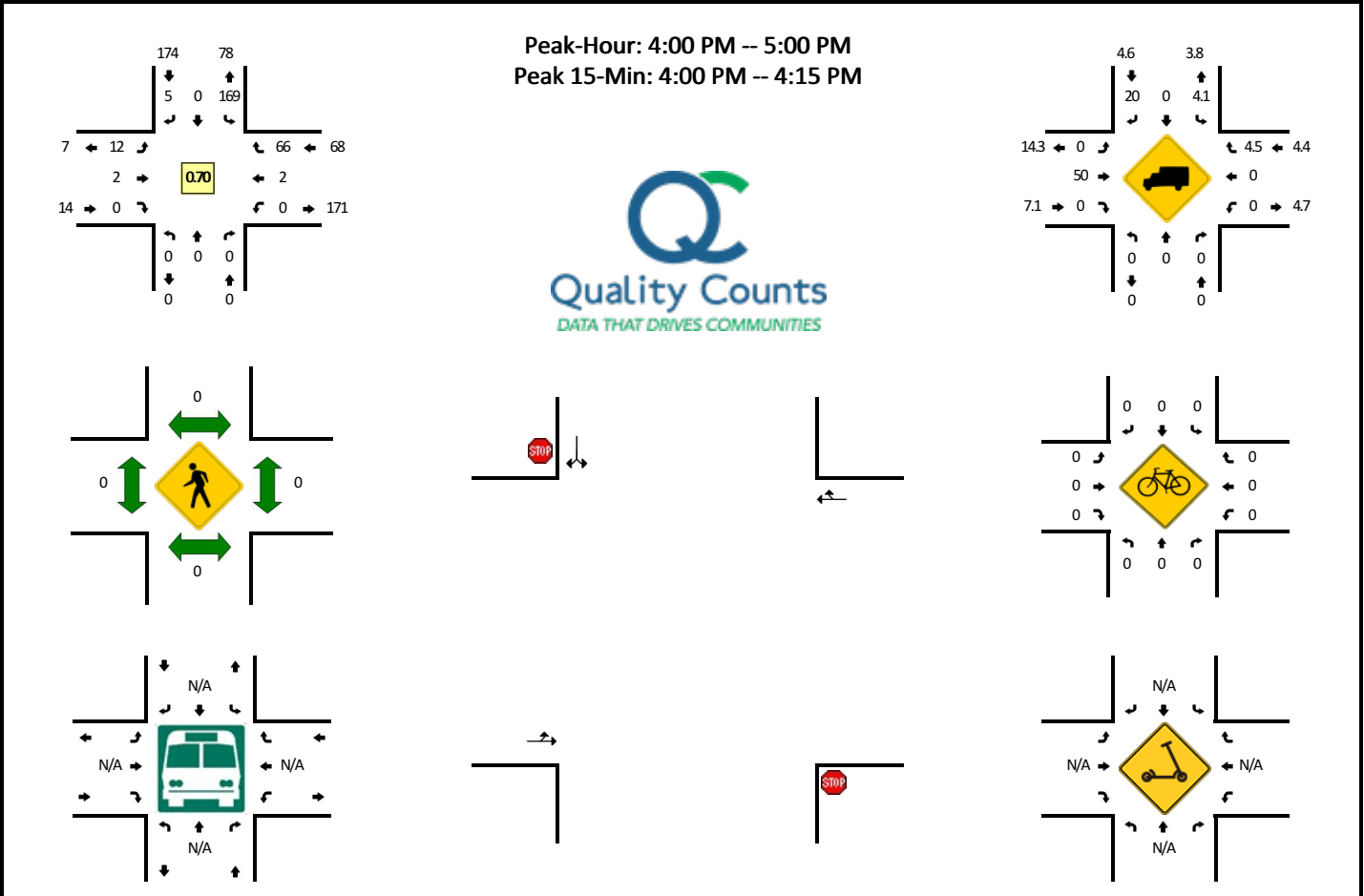


5-Min Count Period Beginning At	N Pekin Rd (Northbound)				N Pekin Rd (Southbound)				Guild Rd/Scott Ave (Eastbound)				Guild Rd/Scott Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	5	0	2	0	0	0	0	0	0	17	25	0	0	9	0	0	58	
4:05 PM	10	0	1	0	0	0	0	0	0	8	10	0	1	14	0	0	44	
4:10 PM	3	0	1	0	0	0	0	0	0	12	6	0	6	15	0	0	43	
4:15 PM	5	0	1	0	0	0	0	0	0	3	8	0	2	14	0	0	33	
4:20 PM	4	0	1	0	0	0	0	0	0	5	7	0	1	10	0	0	28	
4:25 PM	6	0	1	0	0	0	0	0	0	6	3	0	2	14	0	0	32	
4:30 PM	11	0	2	0	0	0	0	0	0	1	8	0	2	20	0	0	44	
4:35 PM	4	0	0	0	0	0	0	0	0	3	8	0	1	21	0	0	37	
4:40 PM	4	0	2	0	0	0	0	0	0	4	9	0	3	10	0	0	32	
4:45 PM	4	0	0	0	0	0	0	0	0	5	8	0	3	22	0	0	42	
4:50 PM	7	0	3	0	0	0	0	0	0	4	5	0	3	6	0	0	28	
4:55 PM	7	0	3	0	0	0	0	0	0	4	2	0	1	12	0	0	29	450
5:00 PM	6	0	2	0	0	0	0	0	0	3	6	0	3	12	0	0	32	424
5:05 PM	10	0	3	0	0	0	0	0	0	4	11	0	3	18	0	0	49	429
5:10 PM	9	0	1	0	0	0	0	0	0	2	4	0	2	14	0	0	32	418
5:15 PM	8	0	1	0	0	0	0	0	0	2	3	0	6	14	0	0	34	419
5:20 PM	12	0	3	0	0	0	0	0	0	2	4	0	4	8	0	0	33	424
5:25 PM	4	0	3	0	0	0	0	0	0	1	5	0	1	8	0	0	22	414
5:30 PM	8	0	2	0	0	0	0	0	0	3	2	0	5	11	0	0	31	401
5:35 PM	6	0	3	0	0	0	0	0	0	2	3	0	2	9	0	0	25	389
5:40 PM	5	0	1	0	0	0	0	0	0	4	5	0	2	10	0	0	27	384
5:45 PM	3	0	0	0	0	0	0	0	0	2	7	0	1	9	0	0	22	364
5:50 PM	9	0	1	0	0	0	0	0	0	2	4	0	0	9	0	0	25	361
5:55 PM	4	0	1	0	0	0	0	0	0	2	8	0	1	13	0	0	29	361
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	72	0	16	0	0	0	0	0	0	148	164	0	28	152	0	0	580	
Heavy Trucks	0	0	4	0	0	0	0	0	0	12	4	0	12	4	0	0	36	
Buses																	0	
Pedestrians		0			0				0				0				0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																	0	

Comments:

LOCATION: N Pekin Rd -- Goerig Rd/Davidson Ave
CITY/STATE: Woodland, WA

QC JOB #: 16208306
DATE: Wed, May 17 2023

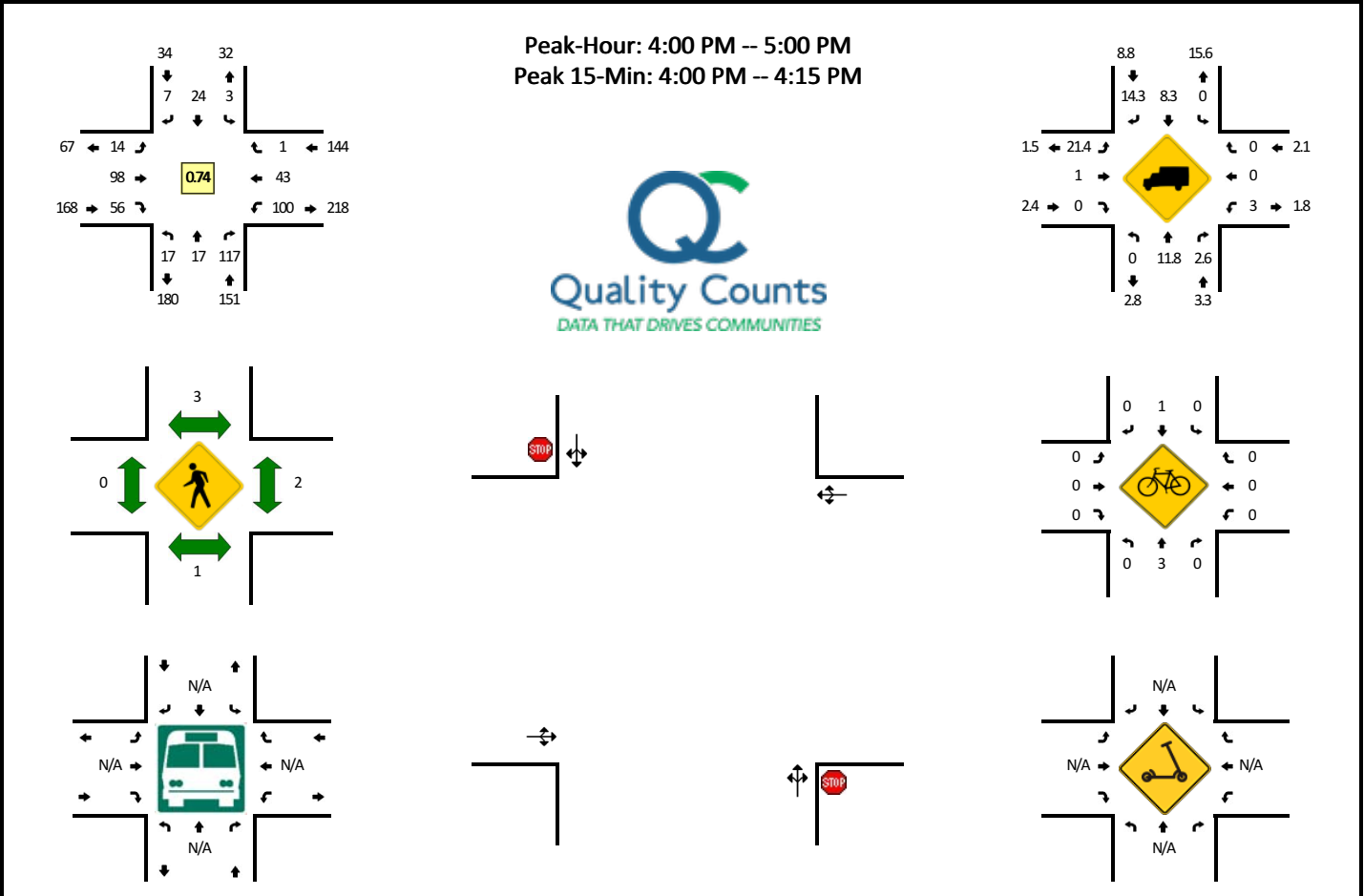


5-Min Count Period Beginning At	N Pekin Rd (Northbound)				N Pekin Rd (Southbound)				Goerig Rd/Davidson Ave (Eastbound)				Goerig Rd/Davidson Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	33	0	0	0	0	0	0	0	0	0	5	0	38	
4:05 PM	0	0	0	0	24	0	0	0	0	0	0	0	0	0	7	0	31	
4:10 PM	0	0	0	0	16	0	0	0	2	1	0	0	0	0	3	0	22	
4:15 PM	0	0	0	0	12	0	0	0	0	0	0	0	0	0	8	0	20	
4:20 PM	0	0	0	0	9	0	1	0	2	0	0	0	0	0	2	0	14	
4:25 PM	0	0	0	0	7	0	1	0	1	1	0	0	0	1	8	0	19	
4:30 PM	0	0	0	0	12	0	0	0	1	0	0	0	0	0	7	0	20	
4:35 PM	0	0	0	0	14	0	2	0	0	0	0	0	0	0	4	0	20	
4:40 PM	0	0	0	0	11	0	1	0	1	0	0	0	0	0	5	0	18	
4:45 PM	0	0	0	0	13	0	0	0	2	0	0	0	0	0	5	0	20	
4:50 PM	0	0	0	0	13	0	0	0	3	0	0	0	0	1	8	0	25	
4:55 PM	0	0	0	0	5	0	0	0	0	0	0	0	0	0	4	0	9	256
5:00 PM	0	0	0	0	8	0	1	0	0	0	0	0	0	0	5	0	14	232
5:05 PM	0	0	0	0	13	0	2	0	0	1	0	0	0	1	13	0	30	231
5:10 PM	0	0	0	0	10	0	0	0	1	0	0	0	0	1	14	0	26	235
5:15 PM	0	0	0	0	10	0	2	0	1	1	0	0	0	1	7	0	22	237
5:20 PM	0	0	0	0	7	0	0	0	1	1	0	0	0	0	12	0	21	244
5:25 PM	0	0	0	0	8	0	1	0	0	0	0	0	0	0	1	0	10	235
5:30 PM	0	0	0	0	5	0	0	0	1	0	0	0	0	0	7	0	13	228
5:35 PM	0	0	0	0	6	0	0	0	1	0	0	0	0	0	5	0	12	220
5:40 PM	0	0	0	0	6	0	0	0	1	0	0	0	0	0	11	0	18	220
5:45 PM	0	0	0	0	8	0	0	0	0	0	0	0	0	0	1	0	9	209
5:50 PM	0	0	0	0	7	0	1	0	0	1	0	0	0	0	17	0	26	210
5:55 PM	0	0	0	0	9	0	0	0	0	0	0	0	0	0	3	0	12	213
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	292	0	0	0	8	4	0	0	0	0	60	0	364	
Heavy Trucks	0	0	0	0	8	0	0	0	0	0	0	0	0	0	4	0	12	
Buses																	0	
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																	0	

Comments:

LOCATION: S Pekin Rd/5th St -- Davidson Ave
CITY/STATE: Woodland, WA

QC JOB #: 16208307
DATE: Wed, May 17 2023

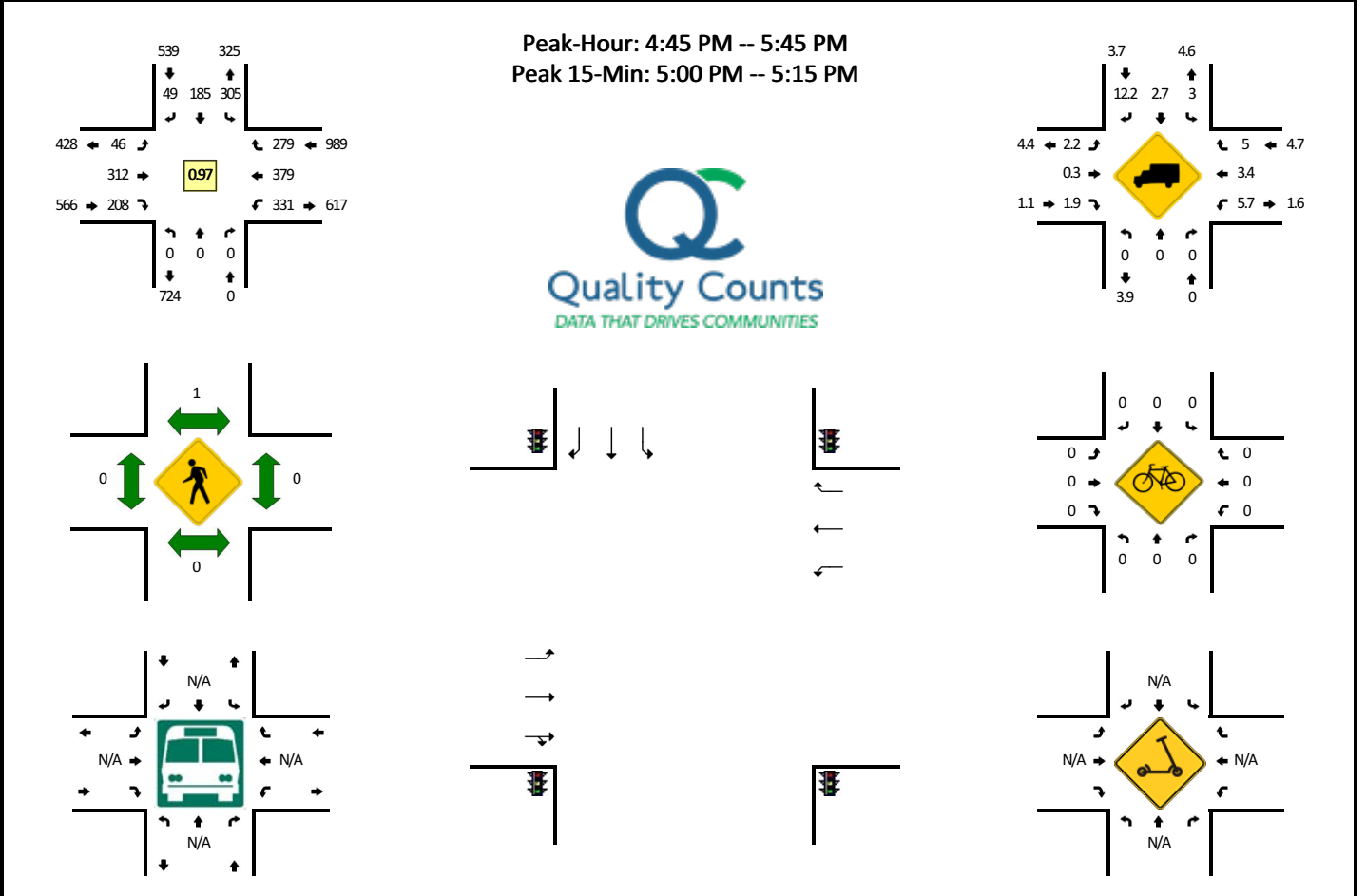


5-Min Count Period Beginning At	S Pekin Rd/5th St (Northbound)				S Pekin Rd/5th St (Southbound)				Davidson Ave (Eastbound)				Davidson Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	2	9	0	0	1	0	0	2	15	16	0	10	4	0	0	60	
4:05 PM	0	2	11	0	2	3	1	0	0	20	5	0	11	6	1	0	62	
4:10 PM	2	2	17	0	0	2	0	0	2	8	2	0	8	3	0	0	46	
4:15 PM	2	2	7	0	0	3	1	0	2	8	2	0	8	3	0	0	38	
4:20 PM	0	2	9	0	0	2	1	0	1	7	3	0	9	1	0	0	35	
4:25 PM	4	1	9	0	0	2	0	0	1	4	2	0	9	6	0	0	38	
4:30 PM	0	1	7	0	0	2	1	0	2	5	3	0	8	4	0	0	33	
4:35 PM	1	1	11	0	0	1	0	0	0	11	5	0	4	3	0	0	37	
4:40 PM	3	0	11	0	0	0	0	0	0	6	3	0	7	4	0	0	34	
4:45 PM	1	1	13	0	0	3	1	0	2	6	7	0	9	3	0	0	46	
4:50 PM	1	1	8	0	1	3	2	0	2	6	5	0	10	4	0	0	43	
4:55 PM	2	2	5	0	0	2	0	0	0	2	3	0	7	2	0	0	25	497
5:00 PM	3	1	9	0	1	2	0	0	0	3	2	0	5	4	0	0	30	467
5:05 PM	5	1	8	0	0	0	1	0	2	12	4	0	15	5	1	0	54	459
5:10 PM	6	0	11	0	1	2	1	0	1	7	3	0	5	7	0	0	44	457
5:15 PM	2	4	15	0	0	0	0	0	1	8	3	0	6	6	0	0	45	464
5:20 PM	4	0	12	0	0	0	1	0	0	4	4	0	8	4	0	0	37	466
5:25 PM	2	0	10	0	2	2	0	0	2	5	1	0	12	0	0	0	36	464
5:30 PM	0	0	7	0	0	1	2	0	1	4	1	0	15	4	0	0	35	466
5:35 PM	3	0	7	0	0	1	0	0	1	4	1	0	11	2	1	0	31	460
5:40 PM	3	3	7	0	0	0	3	0	0	4	1	0	10	5	0	0	36	462
5:45 PM	1	0	12	0	0	3	0	0	1	1	4	0	4	8	1	0	35	451
5:50 PM	2	0	11	0	1	0	1	0	2	10	2	0	11	3	1	0	44	452
5:55 PM	1	1	7	0	0	2	1	0	3	4	1	0	15	2	0	0	37	464
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	12	24	148	0	8	24	4	0	16	172	92	0	116	52	4	0	672	
Heavy Trucks	0	0	0	0	0	4	0	0	4	0	0	0	4	0	0	0	12	
Buses																		
Pedestrians		4				12				0				0			16	
Bicycles	0	4	0		0	0	0		0	0	0		0	0	0		4	
Scoters																		

Comments:

LOCATION: I-5 SB ramps -- SR 503
CITY/STATE: Woodland, WA

QC JOB #: 16208308
DATE: Wed, May 17 2023

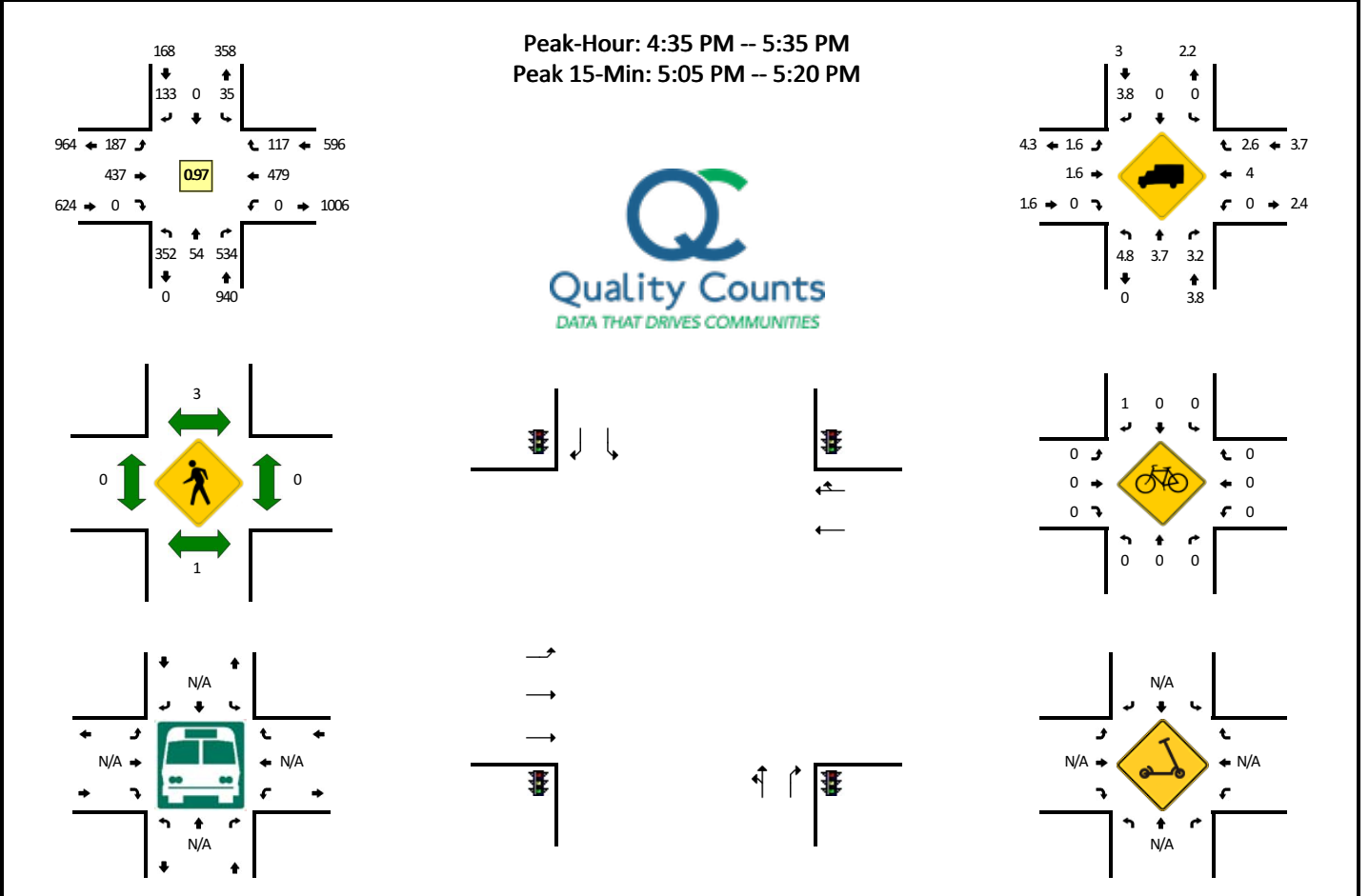


5-Min Count Period Beginning At	I-5 SB ramps (Northbound)				I-5 SB ramps (Southbound)				SR 503 (Eastbound)				SR 503 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	28	11	6	0	3	32	19	0	26	31	27	0	183	
4:05 PM	0	0	0	0	21	20	2	0	6	38	22	0	23	22	28	0	182	
4:10 PM	0	0	0	0	20	26	5	0	5	37	23	0	28	22	15	0	181	
4:15 PM	0	0	0	0	26	18	1	0	5	31	12	0	21	22	11	0	147	
4:20 PM	0	0	0	0	24	13	1	0	5	25	13	0	24	41	17	0	163	
4:25 PM	0	0	0	0	28	10	2	0	3	24	18	0	15	28	18	0	146	
4:30 PM	0	0	0	0	22	18	3	0	4	26	19	0	27	25	19	0	163	
4:35 PM	0	0	0	0	28	14	3	0	4	29	23	0	31	28	18	0	178	
4:40 PM	0	0	0	0	27	10	2	0	4	25	13	0	21	38	15	0	155	
4:45 PM	0	0	0	0	24	17	3	0	2	26	16	0	23	31	32	0	174	
4:50 PM	0	0	0	0	29	11	4	0	2	19	10	0	33	36	18	0	162	
4:55 PM	0	0	0	0	33	14	7	0	1	30	14	0	17	28	13	0	157	1991
5:00 PM	0	0	0	0	24	17	2	0	6	25	14	0	23	24	35	0	170	1978
5:05 PM	0	0	0	0	20	16	3	0	4	44	27	0	24	44	22	0	204	2000
5:10 PM	0	0	0	0	20	8	4	0	7	24	23	0	32	27	22	0	167	1986
5:15 PM	0	0	0	0	37	18	3	0	3	24	11	0	26	25	21	0	168	2007
5:20 PM	0	0	0	0	20	16	6	0	3	37	19	0	40	27	22	0	190	2034
5:25 PM	0	0	0	0	25	15	5	0	8	20	21	0	27	17	24	0	162	2050
5:30 PM	0	0	0	0	30	23	5	0	3	21	12	0	23	43	22	0	182	2069
5:35 PM	0	0	0	0	22	22	5	0	5	21	22	0	34	36	21	0	188	2079
5:40 PM	0	0	0	0	21	8	2	0	2	21	19	0	29	41	27	0	170	2094
5:45 PM	0	0	0	0	25	22	2	0	3	29	13	0	25	29	23	0	171	2091
5:50 PM	0	0	0	0	18	12	2	0	4	32	14	0	24	35	18	0	159	2088
5:55 PM	0	0	0	0	16	14	5	0	5	20	16	0	25	32	29	0	162	2093
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	256	164	36	0	68	372	256	0	316	380	316	0	2164	
Heavy Trucks	0	0	0	0	8	4	12	0	0	0	4	0	20	12	20	0	80	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: I-5 NB ramps -- SR 503
CITY/STATE: Woodland, WA

QC JOB #: 16208309
DATE: Wed, May 17 2023

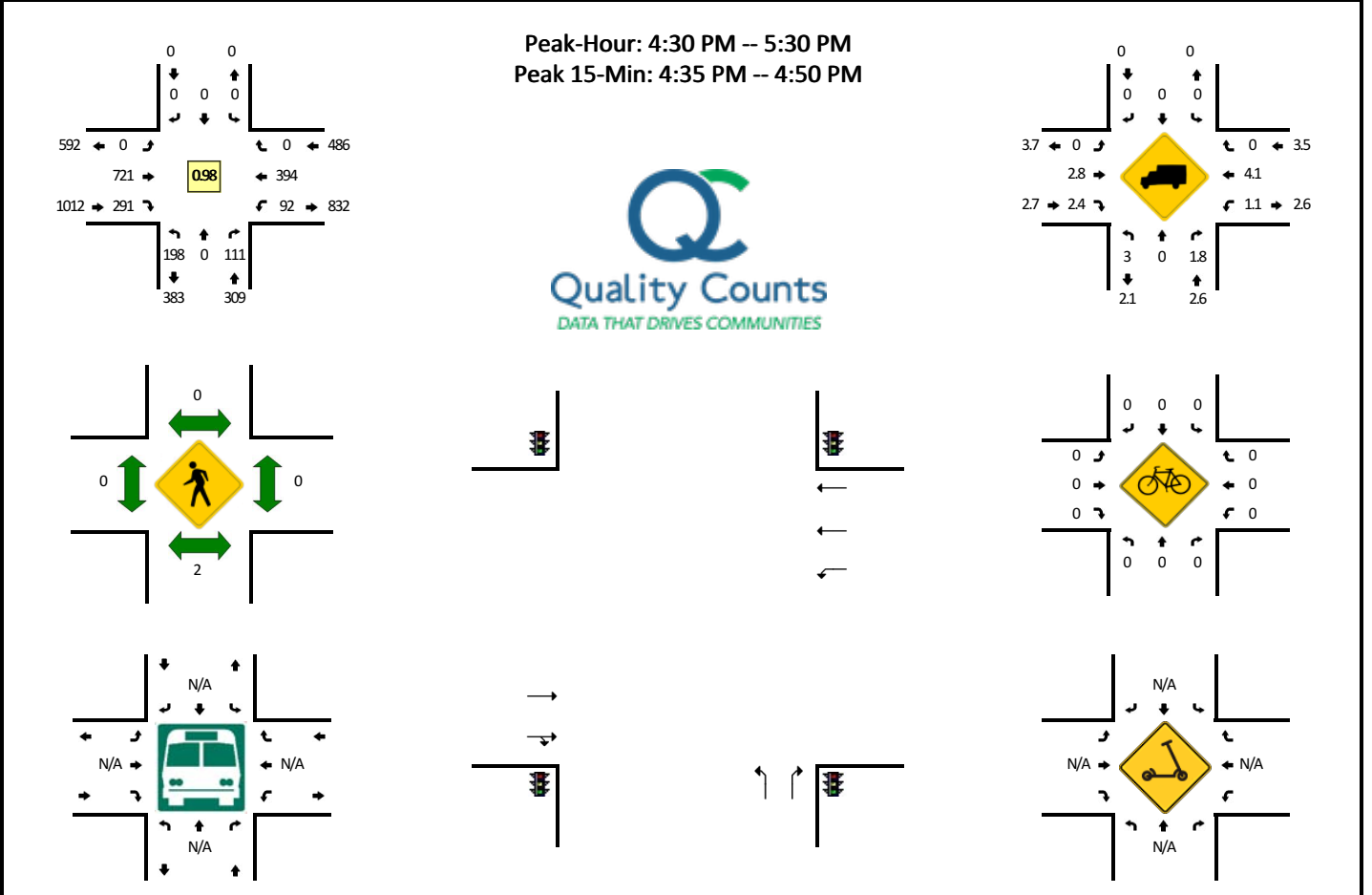


5-Min Count Period Beginning At	I-5 NB ramps (Northbound)				I-5 NB ramps (Southbound)				SR 503 (Eastbound)				SR 503 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	27	4	35	0	1	0	17	0	22	33	0	0	0	42	6	0	187	
4:05 PM	31	4	41	0	6	0	13	0	22	45	0	0	0	37	7	0	206	
4:10 PM	16	9	46	0	2	0	14	0	20	45	0	0	0	34	11	0	197	
4:15 PM	11	1	36	0	7	0	8	0	22	32	0	0	0	35	15	0	167	
4:20 PM	33	2	41	0	6	0	14	0	13	40	0	0	0	32	14	0	195	
4:25 PM	22	6	48	0	4	0	7	0	14	38	0	0	0	33	8	0	180	
4:30 PM	20	6	36	0	1	0	13	0	16	40	0	0	0	41	13	0	186	
4:35 PM	26	9	41	0	4	0	9	0	16	40	0	0	0	39	8	0	192	
4:40 PM	29	4	43	0	3	0	6	0	15	40	0	0	0	41	9	0	190	
4:45 PM	29	7	47	0	2	0	10	0	12	33	0	0	0	40	16	0	196	
4:50 PM	26	5	42	0	5	0	18	0	11	32	0	0	0	45	7	0	191	
4:55 PM	16	6	34	0	0	0	11	0	23	49	0	0	0	29	17	0	185	
5:00 PM	39	5	47	0	4	0	9	0	11	28	0	0	0	39	7	0	189	
5:05 PM	39	2	56	0	5	0	12	0	11	30	0	0	0	43	12	0	210	
5:10 PM	30	4	47	0	6	0	12	0	16	42	0	0	0	35	9	0	201	
5:15 PM	30	4	33	0	2	0	15	0	16	36	0	0	0	45	9	0	190	
5:20 PM	29	1	51	0	2	0	5	0	23	40	0	0	0	36	7	0	194	
5:25 PM	28	5	46	0	2	0	11	0	14	38	0	0	0	42	8	0	194	
5:30 PM	31	2	47	0	0	0	15	0	19	29	0	0	0	45	8	0	196	
5:35 PM	18	5	38	0	1	0	12	0	17	29	0	0	0	53	6	0	179	
5:40 PM	36	2	30	0	2	0	6	0	18	35	0	0	0	47	8	0	184	
5:45 PM	27	6	25	0	4	0	22	0	12	30	0	0	0	37	18	0	181	
5:50 PM	25	4	40	0	1	0	13	0	17	37	0	0	0	39	11	0	187	
5:55 PM	30	6	51	0	2	0	9	0	22	27	0	0	0	37	8	0	192	
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	396	40	544	0	52	0	156	0	172	432	0	0	0	492	120	0	2404	
Heavy Trucks	20	4	12		0	0	4		4	4	0		0	16	4		68	
Buses																		
Pedestrians		0				8				0				0			8	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scooters																		

Comments:

LOCATION: CC St -- SR 503
CITY/STATE: Woodland, WA

QC JOB #: 16208310
DATE: Wed, May 17 2023

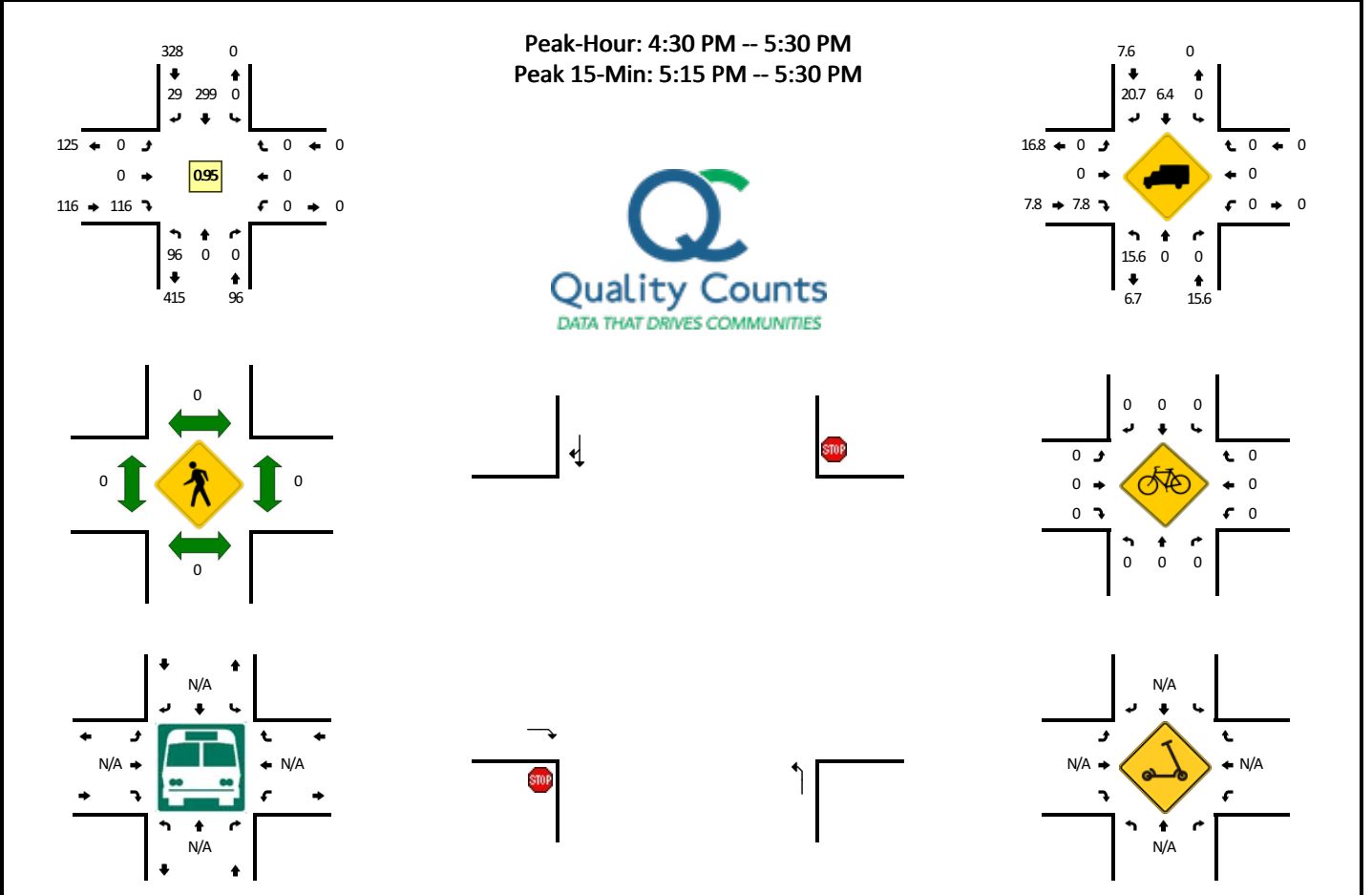


5-Min Count Period Beginning At	CC St (Northbound)				CC St (Southbound)				SR 503 (Eastbound)				SR 503 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	18	0	6	0	0	0	0	0	0	43	26	0	10	33	0	0	136	
4:05 PM	6	0	6	0	0	0	0	0	0	71	23	0	6	36	0	0	148	
4:10 PM	13	0	4	0	0	0	0	0	0	70	22	0	13	32	0	0	154	
4:15 PM	12	0	6	0	0	0	0	0	0	52	24	0	12	37	0	0	143	
4:20 PM	21	0	7	0	0	0	0	0	0	60	27	0	8	25	0	0	148	
4:25 PM	18	0	10	0	0	0	0	0	0	65	25	0	10	23	0	0	151	
4:30 PM	23	0	9	0	0	0	0	0	0	54	24	0	12	30	0	0	152	
4:35 PM	17	0	9	0	0	0	0	0	0	61	25	0	5	30	0	0	147	
4:40 PM	17	0	12	0	0	0	0	0	0	58	28	0	7	35	0	0	157	
4:45 PM	26	0	10	0	0	0	0	0	0	61	20	0	10	31	0	0	158	
4:50 PM	13	0	9	0	0	0	0	0	0	63	19	0	3	35	0	0	142	
4:55 PM	18	0	8	0	0	0	0	0	0	54	29	0	17	28	0	0	154	1790
5:00 PM	10	0	9	0	0	0	0	0	0	57	21	0	1	38	0	0	136	1790
5:05 PM	19	0	11	0	0	0	0	0	0	65	26	0	5	32	0	0	158	1800
5:10 PM	15	0	6	0	0	0	0	0	0	71	25	0	7	28	0	0	152	1798
5:15 PM	17	0	7	0	0	0	0	0	0	47	25	0	9	36	0	0	141	1796
5:20 PM	8	0	7	0	0	0	0	0	0	65	29	0	8	37	0	0	154	1802
5:25 PM	15	0	14	0	0	0	0	0	0	65	20	0	8	34	0	0	156	1807
5:30 PM	26	0	7	0	0	0	0	0	0	60	16	0	7	27	0	0	143	1798
5:35 PM	25	0	8	0	0	0	0	0	0	48	20	0	8	37	0	0	146	1797
5:40 PM	18	0	3	0	0	0	0	0	0	43	24	0	6	36	0	0	130	1770
5:45 PM	25	0	7	0	0	0	0	0	0	39	21	0	11	29	0	0	132	1744
5:50 PM	17	0	7	0	0	0	0	0	0	53	24	0	5	34	0	0	140	1742
5:55 PM	14	0	5	0	0	0	0	0	0	58	23	0	12	31	0	0	143	1731
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	240	0	124	0	0	0	0	0	0	720	292	0	88	384	0	0	1848	
Heavy Trucks	4	0	0		0	0	0		0	36	4		4	16	0		64	
Buses																		
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

LOCATION: I-5 SB offramp -- Scott Ave
CITY/STATE: Woodland, WA

QC JOB #: 16208311
DATE: Wed, May 17 2023



5-Min Count Period Beginning At	I-5 SB offramp (Northbound)				I-5 SB offramp (Southbound)				Scott Ave (Eastbound)				Scott Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	9	0	0	0	0	20	3	0	0	0	8	0	0	0	0	0	40	
4:05 PM	8	0	0	0	0	23	5	0	0	0	9	0	0	0	0	0	45	
4:10 PM	9	0	0	0	0	16	1	0	0	0	14	0	0	0	0	0	40	
4:15 PM	8	0	0	0	0	24	3	0	0	0	6	0	0	0	0	0	41	
4:20 PM	7	0	0	0	0	31	3	0	0	0	3	0	0	0	0	0	44	
4:25 PM	5	0	0	0	0	23	0	0	0	0	7	0	0	0	0	0	35	
4:30 PM	6	0	0	0	0	26	4	0	0	0	11	0	0	0	0	0	47	
4:35 PM	8	0	0	0	0	28	1	0	0	0	9	0	0	0	0	0	46	
4:40 PM	12	0	0	0	0	17	4	0	0	0	4	0	0	0	0	0	37	
4:45 PM	16	0	0	0	0	20	3	0	0	0	8	0	0	0	0	0	47	
4:50 PM	3	0	0	0	0	23	3	0	0	0	14	0	0	0	0	0	43	
4:55 PM	5	0	0	0	0	22	0	0	0	0	11	0	0	0	0	0	38	503
5:00 PM	7	0	0	0	0	25	3	0	0	0	13	0	0	0	0	0	48	511
5:05 PM	8	0	0	0	0	32	1	0	0	0	8	0	0	0	0	0	49	515
5:10 PM	7	0	0	0	0	25	5	0	0	0	6	0	0	0	0	0	43	518
5:15 PM	9	0	0	0	0	27	3	0	0	0	10	0	0	0	0	0	49	526
5:20 PM	8	0	0	0	0	23	1	0	0	0	9	0	0	0	0	0	41	523
5:25 PM	7	0	0	0	0	31	1	0	0	0	13	0	0	0	0	0	52	540
5:30 PM	8	0	0	0	0	26	3	0	0	0	7	0	0	0	0	0	44	537
5:35 PM	4	0	0	0	0	20	2	0	0	0	8	0	0	0	0	0	34	525
5:40 PM	7	0	0	0	0	22	0	0	0	0	9	0	0	0	0	0	38	526
5:45 PM	6	0	0	0	0	29	0	0	0	0	2	0	0	0	0	0	37	516
5:50 PM	7	0	0	0	0	18	1	0	0	0	5	0	0	0	0	0	31	504
5:55 PM	6	0	0	0	0	16	0	0	0	0	2	0	0	0	0	0	24	490
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	96	0	0	0	0	324	20	0	0	0	128	0	0	0	0	0	568	
Heavy Trucks	20	0	0	0	0	8	0	0	0	0	16	0	0	0	0	0	44	
Buses																	0	
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																	0	

Comments:

Appendix B

Crash Data

FIRST COLLISION TYPE / OBJECT STRUCK	VEHICLE 1 ACTION	VEHICLE 2 ACTION	VEHICLE 1 COMPASS DIRECTION FROM	VEHICLE 1 COMPASS DIRECTION TO	VEHICLE 2 COMPASS DIRECTION FROM	VEHICLE 2 COMPASS DIRECTION TO	MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 1)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 2 (UNIT 1)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 3 (UNIT 1)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 2)
Entering at angle	Starting in Traffic Lane	Going Straight Ahead	South	East	West	East	None			Did Not Grant RW to Vehicle
Entering at angle	Going Straight Ahead	Going Straight Ahead	South	North	West	East	Did Not Grant RW to Vehicle			None
Metal Sign Post	Making Left Turn		East	South			Exceeding Reas. Safe Speed			
Metal Sign Post	Making Left Turn		East	South			Under Influence of Alcohol			
From opposite direction - one left turn - one right turn	Making Right Turn	Making Left Turn	South	East	North	East	Did Not Grant RW to Vehicle			Did Not Grant RW to Vehicle
Entering at angle	Making Left Turn	Going Straight Ahead	North	East	East	West	Did Not Grant RW to Vehicle			None
Trailer Parked (Legally or Not)	Making Left Turn		North	East			Unknown Distraction			
Roadway Ditch	Going Straight Ahead		East	West			Exceeding Reas. Safe Speed			
Over Embankment - No Guardrail Present	Going Straight Ahead		South	South			Operating Defective Equipment	Unknown Distraction		
Over Embankment - No Guardrail Present	Making Left Turn		South	West			None			
Entering at angle	Making Right Turn	Going Straight Ahead	West	South	South	South	Improper Turn/Merge			Exceeding Reas. Safe Speed
From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	South	West	North	South	Did Not Grant RW to Vehicle			None
From same direction - both going straight - one stopped - rear-end	Starting in Traffic Lane	Stopped at Signal or Stop Sign	Vehicle Stopped	Vehicle Stopped	Vehicle Stopped	Vehicle Stopped	Follow Too Closely			None
Entering at angle	Going Straight Ahead	Making Left Turn	West	East	South	West	Disregard Traffic Sign and Signals			None
From same direction - both going straight - one stopped - sideswipe	Going Straight Ahead	Stopped at Signal or Stop Sign	West	East	Vehicle Stopped	Vehicle Stopped	Distractions Outside Vehicle			None
From same direction - both going straight - one stopped - rear-end	Stopped at Signal or Stop Sign	Going Straight Ahead	West	East	West	East	None			Follow Too Closely
From same direction - both going straight - one stopped - sideswipe	Going Straight Ahead	Stopped at Signal or Stop Sign	West	East	Vehicle Stopped	Vehicle Stopped	Distractions Outside Vehicle			None
From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	North	East	South	North	Did Not Grant RW to Vehicle			None
From opposite direction - one left turn - one right turn	Making Left Turn	Making Right Turn	North	East	South	East	None			None
Entering at angle	Going Straight Ahead	Making Right Turn	East	West	North	West	Other Contributing Circ Not Listed			Other Contributing Circ Not Listed
From same direction - one left turn - one straight	Making Left Turn	Stopped at Signal or Stop Sign	West	North	Vehicle Stopped	Vehicle Stopped	Other Contributing Circ Not Listed			None
From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	West	North	East	West	Improper Turn/Merge			None
Tree or Stump (stationary)	Making Left Turn		West	North			Under Influence of Alcohol	Disregard Stop and Go Light	Exceeding Reas. Safe Speed	
From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	West	East	West	Vehicle Stopped	Follow Too Closely			None
From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	East	West	East	West	Distractions Outside Vehicle	Follow Too Closely		None
From same direction - both going straight - one stopped - rear-end	Stopped for Traffic	Starting in Traffic Lane	West	East	Vehicle Stopped	Vehicle Stopped	None			Other Distractions
From opposite direction - one left turn - one straight	Going Straight Ahead	Making Left Turn	East	West	West	North	None			Did Not Grant RW to Vehicle
From same direction - both going straight - one stopped - rear-end	Stopped at Signal or Stop Sign	Going Straight Ahead	Vehicle Stopped	Vehicle Stopped	North	East	None			Unknown Distraction
From opposite direction - one left turn - one right turn	Making Left Turn	Making Right Turn	West	North	East	North	Did Not Grant RW to Vehicle			Unknown Distraction
Entering at angle	Making Right Turn	Going Straight Ahead	South	East	West	East	Did Not Grant RW to Vehicle			None
From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	West	North	East	West	Did Not Grant RW to Vehicle			Unknown Distraction
From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	West	North	East	West	Disregard Yield Sign - Flashing Yellow			None
From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	West	North	East	West	Did Not Grant RW to Vehicle			None
From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	West	North	East	West	Did Not Grant RW to Vehicle			None
Entering at angle	Going Straight Ahead	Making Right Turn	East	West	North	West	Other Contributing Circ Not Listed			Other Contributing Circ Not Listed
Tree or Stump (stationary)	Making Left Turn		West	North			Under Influence of Alcohol	Disregard Stop and Go Light	Exceeding Reas. Safe Speed	
From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	West	East	West	Vehicle Stopped	Follow Too Closely			None
From same direction - both going straight - one stopped - rear-end	Stopped at Signal or Stop Sign	Going Straight Ahead	Vehicle Stopped	Vehicle Stopped	North	East	None			Unknown Distraction
From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	West	North	East	West	Did Not Grant RW to Vehicle			Unknown Distraction
From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	West	North	East	West	Did Not Grant RW to Vehicle			None
From same direction - both going straight - both moving - sideswipe	Changing Lanes	Going Straight Ahead	East	West	East	West	Inattention			None
Fence	Making Left Turn		South	West			Exceeding Reas. Safe Speed	Overcorrecting / Oversteering		
Same direction -- both turning right -- both moving -- sideswipe	Making Right Turn	Making Right Turn	East	North	East	North	Unknown Distraction			Unknown Distraction

OFFICER REPORTED CRASHES THAT OCCURRED at OR in the vicinity of MULTIPLE INTERSECTIONS IN THE CITY OF WOODLAND

01/01/2018 - 12/31/2022 See 2nd tab below for road info & interchange drawings

or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports.

JURISDICTION	COUNTY	CITY	PRIMARY TRAFFICWAY	BLOCK NUMBER	INTERSECTING TRAFFICWAY	MILEPOST	A / B	DATE	TIME	MOST SEVERE INJURY TYPE	# INJ	# FATALS	# VEHICLES	# BIKES	VEHICLE 1 TYPE	VEHICLE 2 TYPE	JUNCTION RELATIONSHIP	WEATHER	ROADWAY SURFACE CONDITION	LIGHTING CONDITION
State Rout	Cowlitz	Woodland	005FD02108			0.00		02/21/2018	08:35	Possible Injury	1	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cloudy	Ice	Daylight
State Rout	Cowlitz	Woodland	005FD02108			0.02		09/15/2020	17:15	No Apparent Injury	0	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	At Intersection and Related	Fog or Smog or Smoke	Dry	Dusk
State Rout	Cowlitz	Woodland	005LX02108			0.00		07/24/2019	13:23	Possible Injury	2	0	2	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight
State Rout	Cowlitz	Woodland	005LX02108			0.00		08/17/2018	18:45	Suspected Minor Injury	1	0	2	0	Not Stated	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight
State Rout	Cowlitz	Woodland	005LX02108			0.00		09/13/2020	14:23	Possible Injury	1	0	2	0	Motorcycle	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Fog or Smog or Smoke	Dry	Daylight
State Rout	Cowlitz	Woodland	005LX02108			0.00		01/19/2021	17:58	No Apparent Injury	0	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	At Intersection and Related	Clear or Partly Cloudy	Dry	Dark-Street Lights On
State Rout	Cowlitz	Woodland	005LX02108			0.00		02/12/2020	16:28	No Apparent Injury	0	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight
State Rout	Cowlitz	Woodland	005LX02108			0.00		07/04/2022	22:37	No Apparent Injury	0	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	At Intersection and Related	Clear	Dry	Dark-Street Lights On
State Rout	Cowlitz	Woodland	005LX02108			0.00		02/25/2019	21:41	Suspected Minor Injury	1	0	1	1	Passenger Car		At Intersection and Related	Clear or Partly Cloudy	Dry	Dark-Street Lights On
State Rout	Cowlitz	Woodland	005LX02108			0.00		10/25/2021	17:45	No Apparent Injury	0	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Raining	Wet	Daylight
State Rout	Cowlitz	Woodland	005LX02108			0.00		03/18/2018	09:29	No Apparent Injury	0	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight
State Rout	Cowlitz	Woodland	005LX02108			0.00		07/25/2018	08:24	Possible Injury	2	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight
State Rout	Cowlitz	Woodland	005LX02108			0.00		05/09/2019	01:46	No Apparent Injury	0	0	1	0	Truck Tractor & Semi-Trailer		At Intersection and Related	Clear or Partly Cloudy	Dry	Dark-Street Lights On
State Rout	Cowlitz	Woodland	005LX02108			0.00		02/25/2018	11:15	No Apparent Injury	0	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	At Intersection and Related	Raining	Wet	Daylight
State Rout	Cowlitz	Woodland	005LX02108			0.03		11/09/2022	16:06	No Apparent Injury	0	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	Intersection Related but Not at Intersection	Clear or Partly Cloudy	Dry	Daylight

Dike Access Rd at I-5 SB Ramps

State Rout	Cowlitz	Woodland	005LX02272			0.03		05/18/2021	16:42	No Apparent Injury	0	0	2	0	Passenger Car	Truck Tractor & Semi-Trailer	Entering Roundabout	Clear	Dry	Daylight
State Rout	Cowlitz	Woodland	005LX02272			0.03		06/05/2022	06:00	No Apparent Injury	0	0	1	0	Passenger Car		Circulating Roundabout	Overcast	Wet	Daylight
State Rout	Cowlitz	Woodland	005LX02272			0.04		05/18/2022	16:50	No Apparent Injury	0	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb	Entering Roundabout	Clear	Dry	Daylight
State Rout	Cowlitz	Woodland	005LX02272			0.04		12/21/2018	12:55	No Apparent Injury	0	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	Entering Roundabout	Clear or Partly Cloudy	Dry	Daylight
State Rout	Cowlitz	Woodland	005LX02272			0.04		01/12/2018	05:56	Possible Injury	1	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	Entering Roundabout	Overcast	Wet	Dark-Street Lights On
State Rout	Cowlitz	Woodland	005LX02272			0.04		04/08/2019	11:26	No Apparent Injury	0	0	2	0	Truck - Double Trailer Combinations	Pickup,Panel Truck or Vanette under 10,000 lb	Entering Roundabout	Raining	Wet	Daylight
State Rout	Cowlitz	Woodland	005LX02272			0.05		05/16/2019	08:01	No Apparent Injury	0	0	1	0	Pickup,Panel Truck or Vanette under 10,000 lb		Circulating Roundabout	Raining	Wet	Daylight
State Rout	Cowlitz	Woodland	005R102312			0.36		07/12/2020	17:15	No Apparent Injury	0	0	2	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	Roundabout Related but not at Roundabout	Clear	Dry	Daylight
State Rout	Cowlitz	Woodland	005R102312			0.37		12/09/2021	15:27	No Apparent Injury	0	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	Entering Roundabout	Raining	Wet	Daylight
State Rout	Cowlitz	Woodland	005R102312			0.38		04/05/2022	08:45	No Apparent Injury	0	0	1	0	Pickup,Panel Truck or Vanette under 10,000 lb		Exiting Roundabout	Clear	Dry	Daylight

Dike Access Rd at I-5 NB Ramps

State Rout	Cowlitz	Woodland	005LX02272			0.18		01/28/2020	16:10	No Apparent Injury	0	0	2	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb	Entering Roundabout	Overcast	Dry	Daylight
State Rout	Cowlitz	Woodland	005LX02272			0.18		01/20/2020	14:15	Suspected Minor Injury	1	0	1	0	Passenger Car		At Intersection and Related	Overcast	Dry	Daylight
State Rout	Cowlitz	Woodland	005P102243			0.32		06/08/2018	18:12	No Apparent Injury	0	0	2	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car	Entering Roundabout	Raining	Wet	Daylight

FIRST COLLISION TYPE / OBJECT STRUCK	VEHICLE 1 ACTION	VEHICLE 2 ACTION	VEHICLE 1 COMPASS DIRECTION FROM	VEHICLE 1 COMPASS DIRECTION TO	VEHICLE 2 COMPASS DIRECTION FROM	VEHICLE 2 COMPASS DIRECTION TO	MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 1)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 2 (UNIT 1)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 3 (UNIT 1)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 2)
From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	North	South	Vehicle Stopped	Vehicle Stopped	Inattention	Exceeding Reas. Safe Speed		None
From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	North	South	Vehicle Stopped	Vehicle Stopped	Distractions Outside Vehicle			None
From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped in Roadway	South	North	Vehicle Stopped	Vehicle Stopped	Driver Interacting with Passengers	Follow Too Closely		Driver Not Distracted
From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	West	North	East	West	Other Contributing Circ Not Listed			None
From opposite direction - one left turn - one straight	Going Straight Ahead	Making Left Turn	East	West	West	North	Exceeding Reas. Safe Speed	Operating Recklessly or Aggressively		Did Not Grant RW to Vehicle
From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	East	South	West	East	Did Not Grant RW to Vehicle			Other Contributing Circ Not Listed
From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped at Signal or Stop Sign	East	West	Vehicle Stopped	Vehicle Stopped	Distractions Outside Vehicle			None
From opposite direction - one left turn - one straight	Going Straight Ahead	Making Left Turn	West	East	East	South	None			Did Not Grant RW to Vehicle
Vehicle turning left hits pedestrian	Making Left Turn		West	North			Did Not Grant R/W to Non Motorist			
From opposite direction - one left turn - one straight	Going Straight Ahead	Making Left Turn	West	East	East	South	None			Did Not Grant RW to Vehicle
From opposite direction - one left turn - one straight	Making Left Turn	Going Straight Ahead	West	North	East	West	Did Not Grant RW to Vehicle			None
Entering at angle	Going Straight Ahead	Going Straight Ahead	North	South	East	West	None			Other Contributing Circ Not Listed
Signal Pole	Backing		West	Vehicle Backing			Inattention	Improper Backing		
From opposite direction - one left turn - one straight	Going Straight Ahead	Making Left Turn	East	West	West	North	Other Contributing Circ Not Listed			Other Contributing Circ Not Listed
From same direction - both going straight - both moving - sideswipe	Changing Lanes	Going Straight Ahead	East	West	East	West	Improper Passing			None
From same direction - both going straight - both moving - rear-end	Going Straight Ahead	Going Straight Ahead	West	East	West	East	Unknown Distraction			Follow Too Closely
Street Light Pole or Base	Making Left Turn		North	East			Unknown Distraction			
From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	South	North	South	North	Distracted by Adjusting Vehicle Cntrl			None
Entering at angle	Merging (Entering Traffic)	Going Straight Ahead	South	East	West	East	Did Not Grant RW to Vehicle			None
Entering at angle	Making Right Turn	Going Straight Ahead	North	West	East	West	Did Not Grant RW to Vehicle			None
Same direction -- both turning right -- both moving -- sideswipe	Making Right Turn	Making Right Turn	North	West	North	West	None			Inattention
Vehicle overturned	Going Straight Ahead		West	East			Exceeding Reas. Safe Speed			
From same direction - both going straight - both moving - sideswipe	Going Straight Ahead	Going Straight Ahead	North	South	North	South	Exceeding Reas. Safe Speed			None
From same direction - both going straight - one stopped - rear-end	Going Straight Ahead	Stopped for Traffic	North	South	North	West	Did Not Grant RW to Vehicle	Other Distractions		None
Guide Post	Making Right Turn		North	South			Exceeding Reas. Safe Speed			
Entering at angle	Making Right Turn	Stopped for Traffic	North	East	West	Vehicle Stopped	Follow Too Closely			None
Traffic Island	Going Straight Ahead		South	East			Unknown Distraction			
From same direction - both going straight - one stopped - rear-end	Stopped for Traffic	Going Straight Ahead	Vehicle Stopped	Vehicle Stopped	South	North	None			Follow Too Closely

Output Summary								
General Information								
Project description: TCC Woodland - Existing with Crash Data								
Analyst: SCJ Alliance		Date: 10/11/2023	Area type: Rural					
First year of analysis: 2022								
Last year of analysis: 2022								
Crash Data Description								
Freeway segments	Segment crash data available?	No	First year of crash data:					
	Project-level crash data available?	No	Last year of crash data:					
Ramp segments	Segment crash data available?	No	First year of crash data:					
	Project-level crash data available?	No	Last year of crash data:					
Ramp terminals	Segment crash data available?	Yes	First year of crash data:				2018	
	Project-level crash data available?	No	Last year of crash data:				2022	
Estimated Crash Statistics								
Crashes for Entire Facility								
Estimated number of crashes during Study Period, crashes:		10.7	0.0	0.3	1.0	2.1	7.4	
Estimated average crash freq. during Study Period, crashes/yr:		10.7	0.0	0.3	1.0	2.1	7.4	
Crashes by Facility Component								
	Nbr. Sites	Total	K	A	B	C	PDO	
Freeway segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0	
Ramp segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0	
Crossroad ramp terminals, crashes:	5	10.7	0.0	0.3	1.0	2.1	7.4	
Crashes for Entire Facility by Year								
	Year	Total	K	A	B	C	PDO	
Estimated number of crashes during the Study Period, crashes:		2022	10.7	0.0	0.3	1.0	2.1	7.4
		2023						
		2024						
		2025						
		2026						
		2027						
		2028						
		2029						
		2030						
		2031						
		2032						
		2033						
		2034						
		2035						
		2036						
		2037						
		2038						
		2039						
		2040						
		2041						
		2042						
		2043						
		2044						
		2045						
Distribution of Crashes for Entire Facility								
Crash Type	Crash Type Category	Estimated Number of Crashes During the Study Period						
		Total	K	A	B	C	PDO	
Multiple vehicle	Head-on crashes:	0.0	0.0	0.0	0.0	0.0	0.0	
	Right-angle crashes:	2.6	0.0	0.1	0.3	0.7	1.4	
	Rear-end crashes:	5.2	0.0	0.1	0.5	1.1	3.4	
	Sideswipe crashes:	1.6	0.0	0.0	0.0	0.0	1.6	
	Other multiple-vehicle crashes:	0.1	0.0	0.0	0.0	0.0	0.1	
	Total multiple-vehicle crashes:	9.6	0.0	0.2	0.9	1.9	6.6	
Single vehicle	Crashes with animal:	0.0	0.0	0.0	0.0	0.0	0.0	
	Crashes with fixed object:	0.7	0.0	0.0	0.0	0.1	0.6	
	Crashes with other object:	0.0	0.0	0.0	0.0	0.0	0.0	
	Crashes with parked vehicle:	0.1	0.0	0.0	0.0	0.0	0.1	
	Other single-vehicle crashes:	0.3	0.0	0.0	0.1	0.1	0.1	
	Total single-vehicle crashes:	1.2	0.0	0.0	0.1	0.2	0.8	
Total crashes:		10.7	0.0	0.3	1.0	2.1	7.4	

Evaluation Site Summary							
General Information							
Project description: TCC Woodland - Existing with Crash Data							
Analyst: SCJ Alliance		Date: 10/11/2023	Area type: Rural				
First year of analysis: 2022	Total length of freeway segments for Study Period (mi): 0.000						
Last year of analysis: 2022							
Site Description							
Freeway Segments							
Number	Lanes	Study Period Length (mi)	Study Period Description				
1	0	0.000	0				
2	0	0.000	0				
3	0	0.000	0				
4	0	0.000	0				
5	0	0.000	0				
6	0	0.000	0				
7	0	0.000	0				
8	0	0.000	0				
9	0	0.000	0				
10	0	0.000	0				
11	0	0.000	0				
12	0	0.000	0				
13	0	0.000	0				
14	0	0.000	0				
15	0	0.000	0				
16	0	0.000	0				
17	0	0.000	0				
18	0	0.000	0				
19	0	0.000	0				
20	0	0.000	0				
Ramp Segments							
Number	Study Period Description	Number	Study Period Description				
1	0	21	0				
2	0	22	0				
3	0	23	0				
4	0	24	0				
5	0	25	0				
6	0	26	0				
7	0	27	0				
8	0	28	0				
9	0	29	0				
10	0	30	0				
11	0	31	0				
12	0	32	0				
13	0	33	0				
14	0	34	0				
15	0	35	0				
16	0	36	0				
17	0	37	0				
18	0	38	0				
19	0	39	0				
20	0	40	0				
Crossroad Ramp Terminals							
Number	Config.	Control	Crash Period Description	Study Period Description			
1	D4	Signal	Exit 22 SB Ramps	0			
2	D4	Signal	Exit 22 NB Ramps	0			
3	D3en	Signal	Exit 21 SB Ramps	0			
4	D3ex	Signal	Exit 21 NB Ramps	0			
5	D3ex	One stop	Exit 21 SB Scott	0			
6	0	0	0	0			

Output Summary							
General Information							
Project description: TCC Woodland - No Build							
Analyst: SCJ Alliance		Date: 10/11/2023	Area type: Rural				
First year of analysis: 2025							
Last year of analysis: 2025							
Crash Data Description							
Freeway segments	Segment crash data available?	No	First year of crash data:				
	Project-level crash data available?	No	Last year of crash data:				
Ramp segments	Segment crash data available?	No	First year of crash data:				
	Project-level crash data available?	No	Last year of crash data:				
Ramp terminals	Segment crash data available?	No	First year of crash data:				
	Project-level crash data available?	No	Last year of crash data:				
Estimated Crash Statistics							
Crashes for Entire Facility							
Estimated number of crashes during Study Period, crashes:		12.4	0.0	0.3	1.4	3.2	7.5
Estimated average crash freq. during Study Period, crashes/yr:		12.4	0.0	0.3	1.4	3.2	7.5
Crashes by Facility Component							
	Nbr. Sites	Total	K	A	B	C	PDO
Freeway segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0
Ramp segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0
Crossroad ramp terminals, crashes:	5	12.4	0.0	0.3	1.4	3.2	7.5
Crashes for Entire Facility by Year							
	Year	Total	K	A	B	C	PDO
Estimated number of crashes during the Study Period, crashes:		12.4	0.0	0.3	1.4	3.2	7.5
2025							
2026							
2027							
2028							
2029							
2030							
2031							
2032							
2033							
2034							
2035							
2036							
2037							
2038							
2039							
2040							
2041							
2042							
2043							
2044							
2045							
2046							
2047							
2048							
Distribution of Crashes for Entire Facility							
Crash Type	Crash Type Category	Estimated Number of Crashes During the Study Period					
		Total	K	A	B	C	PDO
Multiple vehicle	Head-on crashes:	0.1	0.0	0.0	0.0	0.0	0.0
	Right-angle crashes:	3.1	0.0	0.1	0.5	1.1	1.5
	Rear-end crashes:	6.1	0.0	0.2	0.7	1.7	3.4
	Sideswipe crashes:	1.6	0.0	0.0	0.0	0.0	1.6
	Other multiple-vehicle crashes:	0.2	0.0	0.0	0.0	0.0	0.1
	Total multiple-vehicle crashes:	11.1	0.0	0.3	1.2	2.9	6.7
Single vehicle	Crashes with animal:	0.0	0.0	0.0	0.0	0.0	0.0
	Crashes with fixed object:	0.8	0.0	0.0	0.1	0.1	0.6
	Crashes with other object:	0.0	0.0	0.0	0.0	0.0	0.0
	Crashes with parked vehicle:	0.1	0.0	0.0	0.0	0.0	0.1
	Other single-vehicle crashes:	0.4	0.0	0.0	0.1	0.2	0.1
	Total single-vehicle crashes:	1.4	0.0	0.0	0.1	0.3	0.8
Total crashes:		12.4	0.0	0.3	1.4	3.2	7.5

Evaluation Site Summary						
General Information						
Project description: TCC Woodland - No Build						
Analyst: SCJ Alliance		Date: 10/11/2023	Area type: Rural			
First year of analysis: 2025	Total length of freeway segments for Study Period (mi): 0.000					
Last year of analysis: 2025						
Site Description						
Freeway Segments						
Number	Lanes	Study Period Length (mi)	Study Period Description			
1	0	0.000	0			
2	0	0.000	0			
3	0	0.000	0			
4	0	0.000	0			
5	0	0.000	0			
6	0	0.000	0			
7	0	0.000	0			
8	0	0.000	0			
9	0	0.000	0			
10	0	0.000	0			
11	0	0.000	0			
12	0	0.000	0			
13	0	0.000	0			
14	0	0.000	0			
15	0	0.000	0			
16	0	0.000	0			
17	0	0.000	0			
18	0	0.000	0			
19	0	0.000	0			
20	0	0.000	0			
Ramp Segments						
Number	Study Period Description	Number	Study Period Description			
1	0	21	0			
2	0	22	0			
3	0	23	0			
4	0	24	0			
5	0	25	0			
6	0	26	0			
7	0	27	0			
8	0	28	0			
9	0	29	0			
10	0	30	0			
11	0	31	0			
12	0	32	0			
13	0	33	0			
14	0	34	0			
15	0	35	0			
16	0	36	0			
17	0	37	0			
18	0	38	0			
19	0	39	0			
20	0	40	0			
Crossroad Ramp Terminals						
Number	Config.	Control	Study Period Description			
1	D4	Signal	Exit 22 SB Ramps			
2	D4	Signal	Exit 22 NB Ramps			
3	D3en	Signal	Exit 21 SB Ramps			
4	D3ex	Signal	Exit 21 NB Ramps			
5	D3ex	One stop	Exit 21 SB Scott			
6	0	0	0			

Output Summary								
General Information								
Project description: TCC Woodland - Industrial Park								
Analyst: SCJ Alliance		Date: 10/11/2023		Area type: Rural				
First year of analysis: 2025								
Last year of analysis: 2025								
Crash Data Description								
Freeway segments	Segment crash data available?	No	First year of crash data:					
	Project-level crash data available?	No	Last year of crash data:					
Ramp segments	Segment crash data available?	No	First year of crash data:					
	Project-level crash data available?	No	Last year of crash data:					
Ramp terminals	Segment crash data available?	No	First year of crash data:					
	Project-level crash data available?	No	Last year of crash data:					
Estimated Crash Statistics								
Crashes for Entire Facility								
Estimated number of crashes during Study Period, crashes:		13.6	0.0	0.4	1.5	3.5	8.2	
Estimated average crash freq. during Study Period, crashes/yr:		13.6	0.0	0.4	1.5	3.5	8.2	
Crashes by Facility Component								
	Nbr. Sites	Total	K	A	B	C	PDO	
Freeway segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0	
Ramp segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0	
Crossroad ramp terminals, crashes:	5	13.6	0.0	0.4	1.5	3.5	8.2	
Crashes for Entire Facility by Year								
	Year	Total	K	A	B	C	PDO	
Estimated number of crashes during the Study Period, crashes:		2025	13.6	0.0	0.4	1.5	3.5	8.2
		2026						
		2027						
		2028						
		2029						
		2030						
		2031						
		2032						
		2033						
		2034						
		2035						
		2036						
		2037						
		2038						
		2039						
		2040						
		2041						
		2042						
		2043						
		2044						
		2045						
		2046						
		2047						
		2048						
Distribution of Crashes for Entire Facility								
Crash Type	Crash Type Category	Estimated Number of Crashes During the Study Period						
		Total	K	A	B	C	PDO	
Multiple vehicle	Head-on crashes:	0.1	0.0	0.0	0.0	0.0	0.1	
	Right-angle crashes:	3.4	0.0	0.1	0.5	1.2	1.6	
	Rear-end crashes:	6.6	0.0	0.2	0.8	1.9	3.8	
	Sideswipe crashes:	1.8	0.0	0.0	0.0	0.0	1.8	
	Other multiple-vehicle crashes:	0.2	0.0	0.0	0.0	0.0	0.1	
	Total multiple-vehicle crashes:	12.1	0.0	0.3	1.3	3.1	7.3	
Single vehicle	Crashes with animal:	0.0	0.0	0.0	0.0	0.0	0.0	
	Crashes with fixed object:	0.9	0.0	0.0	0.1	0.2	0.7	
	Crashes with other object:	0.0	0.0	0.0	0.0	0.0	0.0	
	Crashes with parked vehicle:	0.1	0.0	0.0	0.0	0.0	0.1	
	Other single-vehicle crashes:	0.5	0.0	0.0	0.1	0.2	0.2	
	Total single-vehicle crashes:	1.5	0.0	0.0	0.2	0.4	0.9	
Total crashes:		13.6	0.0	0.4	1.5	3.5	8.2	

Evaluation Site Summary							
General Information							
Project description: TCC Woodland - Industrial Park							
Analyst: SCJ Alliance		Date: 10/11/2023		Area type: Rural			
First year of analysis: 2025				Total length of freeway segments for Study Period (mi):		0.000	
Last year of analysis: 2025							
Site Description							
Freeway Segments							
Number	Lanes	Study Period Length (mi)	Study Period Description				
1	0	0.000	0				
2	0	0.000	0				
3	0	0.000	0				
4	0	0.000	0				
5	0	0.000	0				
6	0	0.000	0				
7	0	0.000	0				
8	0	0.000	0				
9	0	0.000	0				
10	0	0.000	0				
11	0	0.000	0				
12	0	0.000	0				
13	0	0.000	0				
14	0	0.000	0				
15	0	0.000	0				
16	0	0.000	0				
17	0	0.000	0				
18	0	0.000	0				
19	0	0.000	0				
20	0	0.000	0				
Ramp Segments							
Number	Study Period Description	Number	Study Period Description				
1	0	21	0				
2	0	22	0				
3	0	23	0				
4	0	24	0				
5	0	25	0				
6	0	26	0				
7	0	27	0				
8	0	28	0				
9	0	29	0				
10	0	30	0				
11	0	31	0				
12	0	32	0				
13	0	33	0				
14	0	34	0				
15	0	35	0				
16	0	36	0				
17	0	37	0				
18	0	38	0				
19	0	39	0				
20	0	40	0				
Crossroad Ramp Terminals							
Number	Config.	Control	Study Period Description				
1	D4	Signal	Exit 22 SB Ramps				
2	D4	Signal	Exit 22 NB Ramps				
3	D3en	Signal	Exit 21 SB Ramps				
4	D3ex	Signal	Exit 21 NB Ramps				
5	D3ex	One stop	Exit 21 SB Scott				
6	0	0	0				

Output Summary								
General Information								
Project description: TCC Woodland - Light Industrial								
Analyst: SCJ Alliance		Date: 10/13/2023		Area type: Rural				
First year of analysis: 2025								
Last year of analysis: 2025								
Crash Data Description								
Freeway segments	Segment crash data available?	No	First year of crash data:					
	Project-level crash data available?	No	Last year of crash data:					
Ramp segments	Segment crash data available?	No	First year of crash data:					
	Project-level crash data available?	No	Last year of crash data:					
Ramp terminals	Segment crash data available?	No	First year of crash data:					
	Project-level crash data available?	No	Last year of crash data:					
Estimated Crash Statistics								
Crashes for Entire Facility								
Estimated number of crashes during Study Period, crashes:		14.7	0.0	0.4	1.6	3.8	8.9	
Estimated average crash freq. during Study Period, crashes/yr:		14.7	0.0	0.4	1.6	3.8	8.9	
Crashes by Facility Component								
	Nbr. Sites	Total	K	A	B	C	PDO	
Freeway segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0	
Ramp segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0	
Crossroad ramp terminals, crashes:	5	14.7	0.0	0.4	1.6	3.8	8.9	
Crashes for Entire Facility by Year								
	Year	Total	K	A	B	C	PDO	
Estimated number of crashes during the Study Period, crashes:		2025	14.7	0.0	0.4	1.6	3.8	8.9
		2026						
		2027						
		2028						
		2029						
		2030						
		2031						
		2032						
		2033						
		2034						
		2035						
		2036						
		2037						
		2038						
		2039						
		2040						
		2041						
		2042						
		2043						
		2044						
		2045						
		2046						
		2047						
		2048						
Distribution of Crashes for Entire Facility								
Crash Type	Crash Type Category	Estimated Number of Crashes During the Study Period						
		Total	K	A	B	C	PDO	
Multiple vehicle	Head-on crashes:	0.1	0.0	0.0	0.0	0.0	0.1	
	Right-angle crashes:	3.7	0.0	0.1	0.5	1.3	1.7	
	Rear-end crashes:	7.2	0.0	0.2	0.9	2.0	4.1	
	Sideswipe crashes:	1.9	0.0	0.0	0.0	0.0	1.9	
	Other multiple-vehicle crashes:	0.2	0.0	0.0	0.0	0.1	0.1	
	Total multiple-vehicle crashes:	13.1	0.0	0.4	1.4	3.4	7.9	
Single vehicle	Crashes with animal:	0.0	0.0	0.0	0.0	0.0	0.0	
	Crashes with fixed object:	1.0	0.0	0.0	0.1	0.2	0.7	
	Crashes with other object:	0.0	0.0	0.0	0.0	0.0	0.0	
	Crashes with parked vehicle:	0.1	0.0	0.0	0.0	0.0	0.1	
	Other single-vehicle crashes:	0.5	0.0	0.0	0.1	0.2	0.2	
	Total single-vehicle crashes:	1.6	0.0	0.0	0.2	0.4	1.0	
Total crashes:		14.7	0.0	0.4	1.6	3.8	8.9	

Evaluation Site Summary							
General Information							
Project description: TCC Woodland - Light Industrial							
Analyst: SCJ Alliance		Date: 10/13/2023		Area type: Rural			
First year of analysis: 2025				Total length of freeway segments for Study Period (mi): 0.000			
Last year of analysis: 2025							
Site Description							
Freeway Segments							
Number	Lanes	Study Period Length (mi)	Study Period Description				
1	0	0.000	0				
2	0	0.000	0				
3	0	0.000	0				
4	0	0.000	0				
5	0	0.000	0				
6	0	0.000	0				
7	0	0.000	0				
8	0	0.000	0				
9	0	0.000	0				
10	0	0.000	0				
11	0	0.000	0				
12	0	0.000	0				
13	0	0.000	0				
14	0	0.000	0				
15	0	0.000	0				
16	0	0.000	0				
17	0	0.000	0				
18	0	0.000	0				
19	0	0.000	0				
20	0	0.000	0				
Ramp Segments							
Number	Study Period Description	Number	Study Period Description				
1	0	21	0				
2	0	22	0				
3	0	23	0				
4	0	24	0				
5	0	25	0				
6	0	26	0				
7	0	27	0				
8	0	28	0				
9	0	29	0				
10	0	30	0				
11	0	31	0				
12	0	32	0				
13	0	33	0				
14	0	34	0				
15	0	35	0				
16	0	36	0				
17	0	37	0				
18	0	38	0				
19	0	39	0				
20	0	40	0				
Crossroad Ramp Terminals							
Number	Config.	Control	Study Period Description				
1	D4	Signal	Exit 22 SB Ramps				
2	D4	Signal	Exit 22 NB Ramps				
3	D3en	Signal	Exit 21 SB Ramps				
4	D3ex	Signal	Exit 21 NB Ramps				
5	D3ex	One stop	Exit 21 SB Scott				
6	0	0	0				

Appendix C

Traffic Volume Calculations



TCC Woodland Industrial

PM Peak Hour Volumes

Growth Rate: **2.00%**

Intersection	Movement	2019 counts	Pipeline Volumes									High Cube Fulfillment Center	100%	General Light Industrial	General Light Industrial	General Light Industrial	
			Existing 2023 Volumes	Background 2025 Growth	Guid Rd Industrial Volumes	Woodland Library Volumes	Woodland Creek Subdivision Volumes	Port of Woodland Industrial Park Volumes	Quail Meadows Volumes	Total Pipeline Volumes	Baseline 2025 Volumes	Site Generated Volumes	Site Sensitivity Volumes	Industrial Park Generated Volumes	Industrial Park Generated Volumes	Industrial Park Projected 2025 Volumes	Industrial Park Projected 2025 Volumes
			2023	2025	Industrial	Library	Subdivision	Industrial Park	Meadows	Pipeline	2025	Generated	Sensitivity	Generated	Generated	2025	2025
12 Site Driveway N Pekin Rd	L		0	0	0	0	0	0	0	0	0	183	183	53	116	53	116
	EB T		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	R		0	0	0	0	0	0	0	0	0	130	130	0	0	0	0
	L		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB T		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	R		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	L		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NB T		87	3	0	0	0	0	0	0	90	199	199	88	180	178	270
	R		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	L		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SB T		124	5	0	0	0	0	0	0	0	129	11	11	26	32	155	161
R		0	0	0	0	0	0	0	0	0	0	233	233	14	16	14	16
			211									219				400	563
13 Site Driveway N Pekin Rd	L		0	0	0	0	0	0	0	0	0	16	16	3	4	3	4
	EB T		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	R		0	0	0	0	0	0	0	0	0	17	17	3	4	3	4
	L		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB T		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	R		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	L		0	0	0	0	0	0	0	0	0	11	11	1	1	1	1
	NB T		87	3	0	0	0	0	0	0	90	183	183	85	176	175	266
	R		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	L		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SB T		124	5	0	0	0	0	0	0	0	129	130	130	25	31	154	160
R		0	0	0	0	0	0	0	0	0	0	11	11	1	1	1	1
			211									219				337	436
14 Site Driveway N Pekin Rd	L		0	0	0	0	0	0	0	0	0	183	183	3	4	3	4
	EB T		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	R		0	0	0	0	0	0	0	0	0	130	130	3	4	3	4
	L		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB T		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	R		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	L		0	0	0	0	0	0	0	0	0	166	166	1	1	1	1
	NB T		87	3	0	0	0	0	0	0	90	11	11	83	173	173	263
	R		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	L		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SB T		124	5	0	0	0	0	0	0	0	129	147	147	27	34	156	163
R		0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	
			211									219				337	436
15 Site Driveway N Pekin Rd	L		0	0	0	0	0	0	0	0	0	183	183	82	172	82	172
	EB T		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	R		0	0	0	0	0	0	0	0	0	130	130	96	207	96	207
	L		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB T		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	R		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	L		0	0	0	0	0	0	0	0	0	166	166	26	33	26	33
	NB T		87	3	0	0	0	0	0	0	90	11	11	2	2	92	92
	R		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	L		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SB T		124	5	0	0	0	0	0	0	0	129	147	147	6	8	135	137
R		0	0	0	0	0	0	0	0	0	0	0	24	30	24	30	
			211									219				455	671

Appendix D

Operations Analysis Worksheets

MOVEMENT SUMMARY

 **Site: 1 [Dike Access Road at Schurman Way (Site Folder: General)]**

Existing 2023
 PM Peak Hour
 Site Category: (None)
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] ft				
South: NB Schuman Way														
3	L2	20	6.0	22	6.0	0.528	13.7	LOS B	4.1	104.2	0.72	0.80	0.79	35.2
8	T1	60	0.0	66	0.0	0.528	7.7	LOS A	4.1	104.2	0.72	0.80	0.79	35.4
18	R2	395	3.0	434	3.0	0.528	7.9	LOS A	4.1	104.2	0.72	0.80	0.79	34.3
Approach		475	2.7	522	2.7	0.528	8.1	LOS A	4.1	104.2	0.72	0.80	0.79	34.5
East: WB Dike Access Road														
1	L2	110	9.0	121	9.0	0.399	10.3	LOS B	2.8	72.7	0.34	0.52	0.34	36.0
6	T1	120	3.0	132	3.0	0.399	4.5	LOS A	2.8	72.7	0.34	0.52	0.34	36.2
16	R2	235	2.0	258	2.0	0.399	4.5	LOS A	2.8	72.7	0.34	0.52	0.34	35.2
Approach		465	3.9	511	3.9	0.399	5.9	LOS A	2.8	72.7	0.34	0.52	0.34	35.6
North: SB Driveway														
7	L2	245	0.0	269	0.0	0.284	10.9	LOS B	1.6	39.9	0.46	0.67	0.46	34.4
4	T1	55	0.0	60	0.0	0.284	5.3	LOS A	1.6	39.9	0.46	0.67	0.46	34.3
14	R2	5	0.0	5	0.0	0.284	5.3	LOS A	1.6	39.9	0.46	0.67	0.46	33.4
Approach		305	0.0	335	0.0	0.284	9.8	LOS A	1.6	39.9	0.46	0.67	0.46	34.3
West: EB Dike Access Road														
5	L2	5	0.0	5	0.0	0.262	11.7	LOS B	1.5	38.2	0.57	0.63	0.57	35.9
2	T1	205	4.0	225	4.0	0.262	6.3	LOS A	1.5	38.2	0.57	0.63	0.57	35.8
12	R2	30	0.0	33	0.0	0.262	6.1	LOS A	1.5	38.2	0.57	0.63	0.57	34.8
Approach		240	3.4	264	3.4	0.262	6.4	LOS A	1.5	38.2	0.57	0.63	0.57	35.7
All Vehicles		1485	2.7	1632	2.7	0.528	7.5	LOS A	4.1	104.2	0.52	0.66	0.55	35.0

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [Dike Access Road at I-5 SB Ramps (Site Folder: General)]

Existing 2023
 PM Peak Hour
 Site Category: (None)
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist ft				
East: WB Dike Access Road														
1	L2	90	7.0	97	7.0	0.314	9.8	LOS A	0.0	0.0	0.00	0.46	0.00	37.3
6	T1	320	4.0	344	4.0	0.314	3.8	LOS A	0.0	0.0	0.00	0.46	0.00	37.4
Approach		410	4.7	441	4.7	0.314	5.1	LOS A	0.0	0.0	0.00	0.46	0.00	37.4
North: I-5 SB Off-Ramp														
7	L2	135	6.0	145	6.0	0.267	12.1	LOS B	1.4	36.3	0.53	0.71	0.53	35.0
4	T1	5	20.0	5	20.0	0.267	6.7	LOS A	1.4	36.3	0.53	0.71	0.53	34.8
14	R2	120	3.0	129	3.0	0.267	6.1	LOS A	1.4	36.3	0.53	0.71	0.53	34.0
Approach		260	4.9	280	4.9	0.267	9.2	LOS A	1.4	36.3	0.53	0.71	0.53	34.5
West: EB Dike Access Road														
2	T1	610	3.0	656	3.0	0.808	8.8	LOS A	12.0	308.0	0.85	0.80	1.01	35.1
12	R2	280	3.0	301	3.0	0.808	8.9	LOS A	12.0	308.0	0.85	0.80	1.01	34.0
Approach		890	3.0	957	3.0	0.808	8.9	LOS A	12.0	308.0	0.85	0.80	1.01	34.7
All Vehicles		1560	3.8	1677	3.8	0.808	7.9	LOS A	12.0	308.0	0.57	0.69	0.66	35.4

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Old Pacific Highway at I-5 NB Ramps (Site Folder: General)]

Existing 2023
 PM Peak Hour
 Site Category: (None)
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total veh/h]	[HV %]				[Veh. veh]	[Dist ft]				
South: I-5 NB Off-Ramp														
3	L2	220	5.0	244	5.0	0.469	17.3	LOS B	3.5	91.0	0.81	0.96	0.95	32.2
8	T1	5	0.0	6	0.0	0.469	10.9	LOS B	3.5	91.0	0.81	0.96	0.95	32.2
18	R2	115	3.0	128	3.0	0.469	11.2	LOS B	3.5	91.0	0.81	0.96	0.95	31.3
Approach		340	4.3	378	4.3	0.469	15.1	LOS B	3.5	91.0	0.81	0.96	0.95	31.9
East: WB Old Pacific Highway														
6	T1	185	4.0	206	4.0	0.317	7.1	LOS A	2.0	50.6	0.69	0.72	0.69	35.7
16	R2	75	3.0	83	3.0	0.317	7.2	LOS A	2.0	50.6	0.69	0.72	0.69	34.7
Approach		260	3.7	289	3.7	0.317	7.1	LOS A	2.0	50.6	0.69	0.72	0.69	35.4
West: EB Dike Access Road														
5	L2	310	3.0	344	3.0	0.587	9.8	LOS A	0.0	0.0	0.00	0.54	0.00	36.8
2	T1	440	4.0	489	4.0	0.587	3.8	LOS A	0.0	0.0	0.00	0.54	0.00	36.7
Approach		750	3.6	833	3.6	0.587	6.3	LOS A	0.0	0.0	0.00	0.54	0.00	36.7
All Vehicles		1350	3.8	1500	3.8	0.587	8.7	LOS A	3.5	91.0	0.34	0.68	0.37	35.1

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection						
Int Delay, s/veh	3.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	70	25	205	100	5
Future Vol, veh/h	25	70	25	205	100	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	200	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	12	4	11	2	6	17
Mvmt Flow	32	91	32	266	130	6

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	298	0	-	0	320 165
Stage 1	-	-	-	-	165 -
Stage 2	-	-	-	-	155 -
Critical Hdwy	4.22	-	-	-	6.46 6.37
Critical Hdwy Stg 1	-	-	-	-	5.46 -
Critical Hdwy Stg 2	-	-	-	-	5.46 -
Follow-up Hdwy	2.308	-	-	-	3.554 3.453
Pot Cap-1 Maneuver	1208	-	-	-	665 842
Stage 1	-	-	-	-	855 -
Stage 2	-	-	-	-	864 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1208	-	-	-	648 842
Mov Cap-2 Maneuver	-	-	-	-	682 -
Stage 1	-	-	-	-	833 -
Stage 2	-	-	-	-	864 -

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1208	-	-	-	682	842
HCM Lane V/C Ratio	0.027	-	-	-	0.19	0.008
HCM Control Delay (s)	8.1	-	-	-	11.5	9.3
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7	0

Intersection						
Int Delay, s/veh	2.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	70	100	25	165	70	15
Future Vol, veh/h	70	100	25	165	70	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	7	3	24	2	3	12
Mvmt Flow	90	128	32	212	90	19

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	218	0	430
Stage 1	-	-	-	-	154
Stage 2	-	-	-	-	276
Critical Hdwy	-	-	4.34	-	6.43
Critical Hdwy Stg 1	-	-	-	-	5.43
Critical Hdwy Stg 2	-	-	-	-	5.43
Follow-up Hdwy	-	-	2.416	-	3.527
Pot Cap-1 Maneuver	-	-	1232	-	580
Stage 1	-	-	-	-	872
Stage 2	-	-	-	-	768
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1232	-	563
Mov Cap-2 Maneuver	-	-	-	-	619
Stage 1	-	-	-	-	872
Stage 2	-	-	-	-	746

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	11.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	652	-	-	1232	-
HCM Lane V/C Ratio	0.167	-	-	0.026	-
HCM Control Delay (s)	11.6	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	170	5	5	65	10	5
Future Vol, veh/h	170	5	5	65	10	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	4	20	0	4	0	50
Mvmt Flow	243	7	7	93	14	7

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	250	0	354
Stage 1	-	-	-	-	247
Stage 2	-	-	-	-	107
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1327	-	648
Stage 1	-	-	-	-	799
Stage 2	-	-	-	-	922
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1327	-	644
Mov Cap-2 Maneuver	-	-	-	-	644
Stage 1	-	-	-	-	799
Stage 2	-	-	-	-	916

Approach	EB	WB	NE
HCM Control Delay, s	0	0.6	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	658	-	-	1327	-
HCM Lane V/C Ratio	0.033	-	-	0.005	-
HCM Control Delay (s)	10.7	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection												
Int Delay, s/veh	6.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	100	55	100	45	5	15	15	115	5	25	5
Future Vol, veh/h	15	100	55	100	45	5	15	15	115	5	25	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	21	1	0	3	0	0	0	12	3	0	8	14
Mvmt Flow	20	135	74	135	61	7	20	20	155	7	34	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	68	0	0	209	0	0	567	550	172	635	584	65
Stage 1	-	-	-	-	-	-	212	212	-	335	335	-
Stage 2	-	-	-	-	-	-	355	338	-	300	249	-
Critical Hdwy	4.31	-	-	4.13	-	-	7.1	6.62	6.23	7.1	6.58	6.34
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.62	-	6.1	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.62	-	6.1	5.58	-
Follow-up Hdwy	2.389	-	-	2.227	-	-	3.5	4.108	3.327	3.5	4.072	3.426
Pot Cap-1 Maneuver	1421	-	-	1356	-	-	437	429	869	394	415	966
Stage 1	-	-	-	-	-	-	795	709	-	683	632	-
Stage 2	-	-	-	-	-	-	666	623	-	713	690	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1421	-	-	1356	-	-	367	378	869	282	366	966
Mov Cap-2 Maneuver	-	-	-	-	-	-	367	378	-	282	366	-
Stage 1	-	-	-	-	-	-	782	698	-	672	566	-
Stage 2	-	-	-	-	-	-	557	558	-	559	679	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			5.3			12.4			15.7		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	681	1421	-	-	1356	-	-	384
HCM Lane V/C Ratio	0.288	0.014	-	-	0.1	-	-	0.123
HCM Control Delay (s)	12.4	7.6	0	-	7.9	0	-	15.7
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0.3	-	-	0.4

Lanes, Volumes, Timings
 8: I-5 SB On-Ramp/Pacific Ave & Goerig St/Lewis River Rd (SR 503)

Existing 2023
 PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	310	210	330	380	280	0	0	0	305	185	0
Future Volume (vph)	45	310	210	330	380	280	0	0	0	305	185	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	200		0	0			100		0
Storage Lanes	2		0	1		1	0			1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30				30
Link Distance (ft)		1913			492			1514				1436
Travel Time (s)		43.5			11.2			34.4				32.6
Turn Type	pm+pt	NA		pm+pt	NA	Perm				Split		NA
Protected Phases	1	6		5	2					4		4
Permitted Phases	6			2		2						
Detector Phase	1	6		5	2	2				4		4
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0				3.0		3.0
Minimum Split (s)	9.0	18.0		9.0	22.0	22.0				32.0		32.0
Total Split (s)	20.0	68.0		42.0	90.0	90.0				45.0		45.0
Total Split (%)	12.9%	43.9%		27.1%	58.1%	58.1%				29.0%		29.0%
Maximum Green (s)	16.0	64.0		38.0	86.0	86.0				41.0		41.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0				3.0		3.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0				1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0				0.0		0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0				4.0		4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0				3.0		3.0
Recall Mode	None	C-Max		None	C-Max	C-Max				Min		Min
Walk Time (s)		7.0			7.0	7.0				7.0		7.0
Flash Dont Walk (s)		7.0			11.0	11.0				21.0		21.0
Pedestrian Calls (#/hr)		2			2	2				0		0

Intersection Summary

Area Type: Other
 Cycle Length: 155
 Actuated Cycle Length: 155
 Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green, Master Intersection
 Natural Cycle: 65
 Control Type: Actuated-Coordinated

Splits and Phases: 8: I-5 SB On-Ramp/Pacific Ave & Goerig St/Lewis River Rd (SR 503)



HCM 6th Signalized Intersection Summary
 8: I-5 SB On-Ramp/Pacific Ave & Goerig St/Lewis River Rd (SR 503)

Existing 2023
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗				↖	↗	
Traffic Volume (veh/h)	45	310	210	330	380	280	0	0	0	305	185	0
Future Volume (veh/h)	45	310	210	330	380	280	0	0	0	305	185	0
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1870	1885	1870	1811	1856	1826				1856	1856	0
Adj Flow Rate, veh/h	46	320	216	340	392	0				314	191	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	2	1	2	6	3	5				3	3	0
Cap, veh/h	715	1320	871	686	1321					339	355	
Arrive On Green	0.02	0.64	0.64	0.15	1.00	0.00				0.19	0.19	0.00
Sat Flow, veh/h	1781	2067	1364	1725	1856	1547				1767	1856	0
Grp Volume(v), veh/h	46	276	260	340	392	0				314	191	0
Grp Sat Flow(s),veh/h/ln	1781	1791	1640	1725	1856	1547				1767	1856	0
Q Serve(g_s), s	1.4	10.2	10.5	10.9	0.0	0.0				27.1	14.4	0.0
Cycle Q Clear(g_c), s	1.4	10.2	10.5	10.9	0.0	0.0				27.1	14.4	0.0
Prop In Lane	1.00		0.83	1.00		1.00				1.00		0.00
Lane Grp Cap(c), veh/h	715	1144	1047	686	1321					339	355	
V/C Ratio(X)	0.06	0.24	0.25	0.50	0.30					0.93	0.54	
Avail Cap(c_a), veh/h	864	1144	1047	949	1321					467	491	
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67				1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.87	0.87	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	9.3	12.0	12.0	6.8	0.0	0.0				61.6	56.5	0.0
Incr Delay (d2), s/veh	0.0	0.5	0.6	0.5	0.5	0.0				20.3	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	4.3	4.1	3.2	0.2	0.0				14.1	6.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.3	12.5	12.6	7.3	0.5	0.0				81.9	57.7	0.0
LnGrp LOS	A	B	B	A	A					F	E	
Approach Vol, veh/h		582			732	A					505	A
Approach Delay, s/veh		12.3			3.6						72.8	
Approach LOS		B			A						E	
Timer - Assigned Phs	1	2		4	5	6						
Phs Duration (G+Y+Rc), s	7.0	114.3		33.7	18.3	103.0						
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0						
Max Green Setting (Gmax), s	16.0	86.0		41.0	38.0	64.0						
Max Q Clear Time (g_c+I1), s	3.4	2.0		29.1	12.9	12.5						
Green Ext Time (p_c), s	0.1	1.7		0.6	1.4	2.4						

Intersection Summary

HCM 6th Ctrl Delay	25.6
HCM 6th LOS	C

Notes

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

Lanes, Volumes, Timings
 9: I-5 NB Off-Ramp/Atlantic Ave & Lewis River Rd (SR 503)

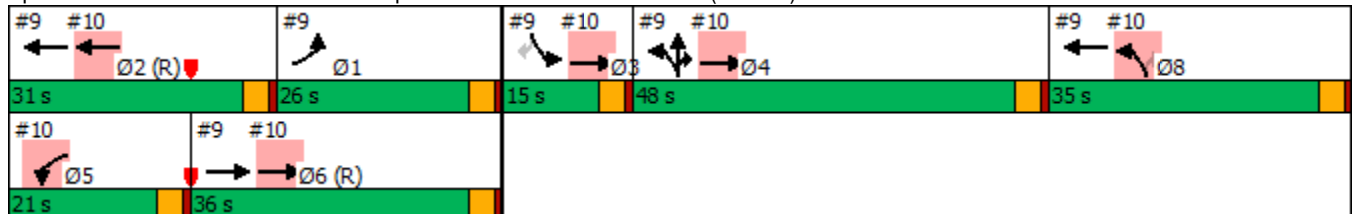
Existing 2023
 PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	435	0	0	480	115	350	55	535	35	0	135
Future Volume (vph)	185	435	0	0	480	115	350	55	535	35	0	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	0		0	75		0
Storage Lanes	1		0	0		0	0		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30				30
Link Distance (ft)		492			137			823				446
Travel Time (s)		11.2			3.1			18.7				10.1
Turn Type	Prot	NA			NA		Split	NA	Prot	Prot		Perm
Protected Phases	1	6			2 8		4	4	4	3		
Permitted Phases												3
Detector Phase	1	6			2 8		4	4	4	3		3
Switch Phase												
Minimum Initial (s)	5.0	5.0					5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	9.0	25.0					32.0	32.0	32.0	13.0		13.0
Total Split (s)	26.0	36.0					48.0	48.0	48.0	15.0		15.0
Total Split (%)	16.8%	23.2%					31.0%	31.0%	31.0%	9.7%		9.7%
Maximum Green (s)	22.0	32.0					44.0	44.0	44.0	11.0		11.0
Yellow Time (s)	3.0	3.0					3.0	3.0	3.0	3.0		3.0
All-Red Time (s)	1.0	1.0					1.0	1.0	1.0	1.0		1.0
Lost Time Adjust (s)	0.0	0.0						0.0	0.0	0.0		0.0
Total Lost Time (s)	4.0	4.0						4.0	4.0	4.0		4.0
Lead/Lag	Lag	Lag					Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0	3.0		3.0
Recall Mode	None	C-Min					None	None	None	None		None
Walk Time (s)		7.0					7.0	7.0	7.0			
Flash Dont Walk (s)		14.0					21.0	21.0	21.0			
Pedestrian Calls (#/hr)		0					0	0	0			

Intersection Summary

Area Type: Other
 Cycle Length: 155
 Actuated Cycle Length: 155
 Offset: 3 (2%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 115
 Control Type: Actuated-Coordinated

Splits and Phases: 9: I-5 NB Off-Ramp/Atlantic Ave & Lewis River Rd (SR 503)



Lanes, Volumes, Timings
 9: I-5 NB Off-Ramp/Atlantic Ave & Lewis River Rd (SR 503)

Existing 2023
 PM Peak Hour

Lane Group	Ø2	Ø5	Ø8
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Right Turn on Red			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Turn Type			
Protected Phases	2	5	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	27.0	9.0	31.0
Total Split (s)	31.0	21.0	35.0
Total Split (%)	20%	14%	23%
Maximum Green (s)	27.0	17.0	31.0
Yellow Time (s)	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lead	
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	C-Min	None	None
Walk Time (s)	7.0		7.0
Flash Dont Walk (s)	16.0		20.0
Pedestrian Calls (#/hr)	0		0
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
 9: I-5 NB Off-Ramp/Atlantic Ave & Lewis River Rd (SR 503)

Existing 2023
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	435	0	0	480	115	350	55	535	35	0	135
Future Volume (vph)	185	435	0	0	480	115	350	55	535	35	0	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95			1.00	1.00	1.00		1.00
Frt	1.00	1.00			0.97			1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00			0.96	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3377			1737	1568	1805		1553
Flt Permitted	0.95	1.00			1.00			0.96	1.00	0.95		1.00
Satd. Flow (perm)	1770	3539			3377			1737	1568	1805		1553
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	191	448	0	0	495	119	361	57	552	36	0	139
RTOR Reduction (vph)	0	0	0	0	14	0	0	0	341	0	0	130
Lane Group Flow (vph)	191	448	0	0	600	0	0	418	211	36	0	9
Heavy Vehicles (%)	2%	2%	0%	0%	4%	3%	5%	4%	3%	0%	0%	4%
Turn Type	Prot	NA			NA		Split	NA	Prot	Prot		Perm
Protected Phases	1	6			2		4	4	4	3		
Permitted Phases												3
Actuated Green, G (s)	25.7	41.7			60.1			42.8	42.8	10.4		10.4
Effective Green, g (s)	25.7	41.7			60.1			42.8	42.8	10.4		10.4
Actuated g/C Ratio	0.17	0.27			0.39			0.28	0.28	0.07		0.07
Clearance Time (s)	4.0	4.0						4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	293	952			1309			479	432	121		104
v/s Ratio Prot	c0.11	0.13			c0.18			c0.24	0.13	c0.02		
v/s Ratio Perm												0.01
v/c Ratio	0.65	0.47			0.46			0.87	0.49	0.30		0.09
Uniform Delay, d1	60.5	47.4			35.3			53.5	46.9	68.8		67.9
Progression Factor	1.05	1.05			0.02			1.00	1.00	1.00		1.00
Incremental Delay, d2	4.6	1.5			0.2			16.0	0.9	1.4		0.4
Delay (s)	68.0	51.1			0.9			69.5	47.8	70.2		68.2
Level of Service	E	D			A			E	D	E		E
Approach Delay (s)		56.1			0.9			57.1			68.6	
Approach LOS		E			A			E			E	

Intersection Summary

HCM 2000 Control Delay	43.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	155.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
10: CC St & Lewis River Rd (SR 503)

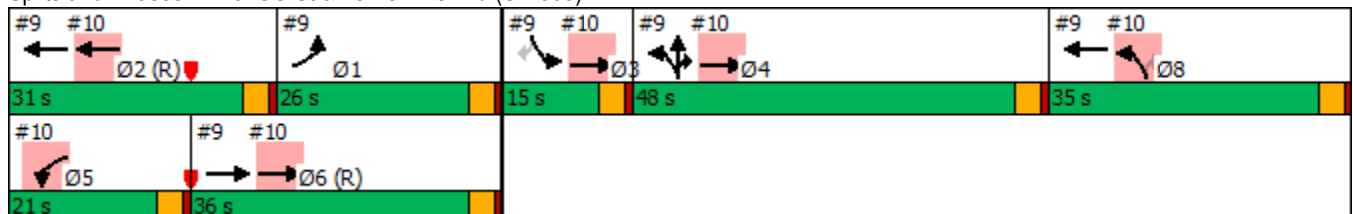
Existing 2023
PM Peak Hour

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø3	Ø4	Ø6
Lane Configurations	↑↑		↖	↑↑	↖	↗				
Traffic Volume (vph)	720	290	90	395	200	110				
Future Volume (vph)	720	290	90	395	200	110				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Storage Length (ft)		0	150		0	150				
Storage Lanes		0	2		1	1				
Taper Length (ft)			25		25					
Right Turn on Red		Yes			Yes					
Link Speed (mph)	30			30	30					
Link Distance (ft)	137			1875	856					
Travel Time (s)	3.1			42.6	19.5					
Turn Type	NA		Prot	NA	Prot	Perm				
Protected Phases	3 4 6		5	2	8		1	3	4	6
Permitted Phases						8				
Detector Phase	3 4 6		5	2	8	8				
Switch Phase										
Minimum Initial (s)			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)			9.0	27.0	31.0	31.0	9.0	13.0	32.0	25.0
Total Split (s)			21.0	31.0	35.0	35.0	26.0	15.0	48.0	36.0
Total Split (%)			13.5%	20.0%	22.6%	22.6%	17%	10%	31%	23%
Maximum Green (s)			17.0	27.0	31.0	31.0	22.0	11.0	44.0	32.0
Yellow Time (s)			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0	0.0	0.0	0.0				
Total Lost Time (s)			4.0	4.0	4.0	4.0				
Lead/Lag			Lead	Lead			Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Vehicle Extension (s)			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode			None	C-Min	None	None	None	None	None	C-Min
Walk Time (s)			7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)			16.0	20.0	20.0	20.0			21.0	14.0
Pedestrian Calls (#/hr)			0	0	0	0			0	0

Intersection Summary

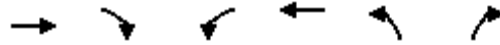
Area Type: Other
 Cycle Length: 155
 Actuated Cycle Length: 155
 Offset: 3 (2%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 115
 Control Type: Actuated-Coordinated

Splits and Phases: 10: CC St & Lewis River Rd (SR 503)



HCM Signalized Intersection Capacity Analysis
 10: CC St & Lewis River Rd (SR 503)

Existing 2023
 PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↙	↑↑	↙	↗
Traffic Volume (vph)	720	290	90	395	200	110
Future Volume (vph)	720	290	90	395	200	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3363		1787	3471	1752	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3363		1787	3471	1752	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	735	296	92	403	204	112
RTOR Reduction (vph)	24	0	0	0	0	92
Lane Group Flow (vph)	1007	0	92	403	204	20
Heavy Vehicles (%)	3%	2%	1%	4%	3%	2%
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	3 4 6		5	2	8	
Permitted Phases						8
Actuated Green, G (s)	102.9		13.0	29.0	27.1	27.1
Effective Green, g (s)	102.9		13.0	29.0	27.1	27.1
Actuated g/C Ratio	0.66		0.08	0.19	0.17	0.17
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2232		149	649	306	276
v/s Ratio Prot	c0.30		0.05	c0.12	c0.12	
v/s Ratio Perm						0.01
v/c Ratio	0.45		0.62	0.62	0.67	0.07
Uniform Delay, d1	12.5		68.6	57.9	59.7	53.4
Progression Factor	0.52		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1		7.4	4.4	5.4	0.1
Delay (s)	6.6		76.0	62.4	65.1	53.5
Level of Service	A		E	E	E	D
Approach Delay (s)	6.6			64.9	61.0	
Approach LOS	A			E	E	

Intersection Summary			
HCM 2000 Control Delay	31.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	155.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection						
Int Delay, s/veh	2.9					
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations	↶		↷			↶
Traffic Vol, veh/h	95	0	300	30	0	115
Future Vol, veh/h	95	0	300	30	0	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	-	1	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	16	0	6	20	0	8
Mvmt Flow	100	0	316	32	0	121

Major/Minor	Major2	Minor2
Conflicting Flow All	-	0
Stage 1	-	-
Stage 2	-	-
Critical Hdwy	-	-
Critical Hdwy Stg 1	-	-
Critical Hdwy Stg 2	-	-
Follow-up Hdwy	-	-
Pot Cap-1 Maneuver	-	0
Stage 1	-	0
Stage 2	-	0
Platoon blocked, %	-	-
Mov Cap-1 Maneuver	-	-
Mov Cap-2 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-

Approach	SB	NE
HCM Control Delay, s	0	11.3
HCM LOS		B

Minor Lane/Major Mvmt	NELn1	SBT	SBR
Capacity (veh/h)	696	-	-
HCM Lane V/C Ratio	0.174	-	-
HCM Control Delay (s)	11.3	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0.6	-	-

Intersection: 4: Guild Rd & Schurman Way

Movement	EB	WB	SB	SB
Directions Served	L	TR	L	R
Maximum Queue (ft)	31	4	71	45
Average Queue (ft)	6	0	33	6
95th Queue (ft)	26	3	59	28
Link Distance (ft)		1097		1932
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150		200	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: N Pekin Rd & Guild Rd/W Scott Ave

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	4	60	84
Average Queue (ft)	0	6	38
95th Queue (ft)	3	31	69
Link Distance (ft)	1097	2518	4798
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Goerig Rd & N Pekin Rd/Davidson Ave

Movement	WB	NE
Directions Served	LT	LR
Maximum Queue (ft)	18	51
Average Queue (ft)	1	12
95th Queue (ft)	8	41
Link Distance (ft)	797	627
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
Existing 2023

PM Peak Hour

Intersection: 7: S Pekin Rd/5th St & Davidson Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	32	88	91	74
Average Queue (ft)	2	17	38	24
95th Queue (ft)	16	59	65	55
Link Distance (ft)	797	1220	446	343
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: I-5 SB On-Ramp/Pacific Ave & Goerig St/Lewis River Rd (SR 503)

Movement	EB	EB	EB	WB	WB	WB	SB	SB
Directions Served	L	T	TR	L	T	R	L	T
Maximum Queue (ft)	73	174	324	224	315	103	125	653
Average Queue (ft)	22	88	145	125	131	11	119	366
95th Queue (ft)	55	182	265	219	255	56	140	581
Link Distance (ft)			1848		420	420		1372
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150	150		200			100	
Storage Blk Time (%)	0	0	6	1	2		45	26
Queuing Penalty (veh)	0	1	12	4	6		83	78

Intersection: 9: I-5 NB Off-Ramp/Atlantic Ave & Lewis River Rd (SR 503)

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	T	TR	LT	R	L	R
Maximum Queue (ft)	224	313	310	46	59	811	812	87	124
Average Queue (ft)	159	150	176	10	13	739	759	32	50
95th Queue (ft)	242	257	266	29	43	956	920	74	94
Link Distance (ft)		420	420	52	52	769	769		370
Upstream Blk Time (%)				0	1	41	72		
Queuing Penalty (veh)				0	4	0	0		
Storage Bay Dist (ft)	200							75	
Storage Blk Time (%)	6	1						6	3
Queuing Penalty (veh)	14	2						8	1

Queuing and Blocking Report
Existing 2023

PM Peak Hour

Intersection: 10: CC St & Lewis River Rd (SR 503)

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	19	66	162	174	658	355	175
Average Queue (ft)	2	51	108	163	351	176	78
95th Queue (ft)	19	71	185	203	626	306	185
Link Distance (ft)	52	52			1840	809	
Upstream Blk Time (%)	0	23					
Queuing Penalty (veh)	2	115					
Storage Bay Dist (ft)			150	150			150
Storage Blk Time (%)			3	27	21	17	0
Queuing Penalty (veh)			6	54	59	18	0

Intersection: 11: W Scott Ave & Pacific St/I-5 SB Off Ramp

Movement	NB	SB	NE
Directions Served	L	TR	R
Maximum Queue (ft)	110	12	89
Average Queue (ft)	31	1	44
95th Queue (ft)	76	8	73
Link Distance (ft)	186	1110	2518
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 467

MOVEMENT SUMMARY

Site: 1 [Dike Access Road at Schurman Way (Site Folder: General)]

Projected 2025 without Project
 PM Peak Hour
 Site Category: (None)
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] ft				
South: NB Schuman Way														
3	L2	20	6.0	22	6.0	0.606	14.9	LOS B	5.5	141.6	0.78	0.88	0.94	34.6
8	T1	60	0.0	66	0.0	0.606	9.0	LOS A	5.5	141.6	0.78	0.88	0.94	34.8
18	R2	455	3.0	500	3.0	0.606	9.1	LOS A	5.5	141.6	0.78	0.88	0.94	33.7
Approach		535	2.8	588	2.8	0.606	9.3	LOS A	5.5	141.6	0.78	0.88	0.94	33.9
East: WB Dike Access Road														
1	L2	120	9.0	132	9.0	0.422	10.3	LOS B	3.1	80.2	0.35	0.52	0.35	35.9
6	T1	125	3.0	137	3.0	0.422	4.6	LOS A	3.1	80.2	0.35	0.52	0.35	36.1
16	R2	245	2.0	269	2.0	0.422	4.5	LOS A	3.1	80.2	0.35	0.52	0.35	35.1
Approach		490	4.0	538	4.0	0.422	6.0	LOS A	3.1	80.2	0.35	0.52	0.35	35.5
North: SB Driveway														
7	L2	255	0.0	280	0.0	0.302	11.0	LOS B	1.7	43.3	0.48	0.68	0.48	34.3
4	T1	60	0.0	66	0.0	0.302	5.4	LOS A	1.7	43.3	0.48	0.68	0.48	34.3
14	R2	5	0.0	5	0.0	0.302	5.4	LOS A	1.7	43.3	0.48	0.68	0.48	33.4
Approach		320	0.0	352	0.0	0.302	9.9	LOS A	1.7	43.3	0.48	0.68	0.48	34.3
West: EB Dike Access Road														
5	L2	5	0.0	5	0.0	0.279	11.9	LOS B	1.6	41.6	0.60	0.64	0.60	35.8
2	T1	215	4.0	236	4.0	0.279	6.5	LOS A	1.6	41.6	0.60	0.64	0.60	35.7
12	R2	30	0.0	33	0.0	0.279	6.3	LOS A	1.6	41.6	0.60	0.64	0.60	34.8
Approach		250	3.4	275	3.4	0.279	6.6	LOS A	1.6	41.6	0.60	0.64	0.60	35.6
All Vehicles		1595	2.7	1753	2.7	0.606	8.0	LOS A	5.5	141.6	0.56	0.69	0.62	34.7

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [Dike Access Road at I-5 SB Ramps (Site Folder: General)]

Projected 2025 without Project
 PM Peak Hour
 Site Category: (None)
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV %]	[Total veh/h]	[HV %]				[Veh. veh]	[Dist ft]				
East: WB Dike Access Road														
1	L2	95	7.0	102	7.0	0.329	9.8	LOS A	0.0	0.0	0.00	0.47	0.00	37.3
6	T1	335	4.0	360	4.0	0.329	3.8	LOS A	0.0	0.0	0.00	0.47	0.00	37.4
Approach		430	4.7	462	4.7	0.329	5.1	LOS A	0.0	0.0	0.00	0.47	0.00	37.4
North: I-5 SB Off-Ramp														
7	L2	140	6.0	151	6.0	0.281	12.3	LOS B	1.5	38.8	0.55	0.72	0.55	34.9
4	T1	5	20.0	5	20.0	0.281	6.9	LOS A	1.5	38.8	0.55	0.72	0.55	34.7
14	R2	125	3.0	134	3.0	0.281	6.2	LOS A	1.5	38.8	0.55	0.72	0.55	34.0
Approach		270	4.9	290	4.9	0.281	9.4	LOS A	1.5	38.8	0.55	0.72	0.55	34.5
West: EB Dike Access Road														
2	T1	645	3.0	694	3.0	0.861	10.8	LOS D	15.8	404.2	0.95	0.90	1.21	34.1
12	R2	295	3.0	317	3.0	0.861	10.9	LOS D	15.8	404.2	0.95	0.90	1.21	33.1
Approach		940	3.0	1011	3.0	0.861	10.9	LOS B	15.8	404.2	0.95	0.90	1.21	33.8
All Vehicles		1640	3.7	1763	3.7	0.861	9.1	LOS A	15.8	404.2	0.63	0.76	0.79	34.8

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: SCJ ALLIANCE | Licence: PLUS / 1PC | Processed: Wednesday, September 20, 2023 10:43:15 AM

Project: N:\Projects\5528 Trammell Crow Company\23-000277 TCC Woodland Industrial\03-Analysis\Operations\RAB\2025 without project.sip9

MOVEMENT SUMMARY

Site: 3 [Old Pacific Highway at I-5 NB Ramps (Site Folder: General)]

Projected 2025 without Project
 PM Peak Hour
 Site Category: (None)
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist ft				
South: I-5 NB Off-Ramp														
3	L2	225	5.0	250	5.0	0.501	18.7	LOS B	4.1	105.6	0.84	1.01	1.06	31.6
8	T1	5	0.0	6	0.0	0.501	12.4	LOS B	4.1	105.6	0.84	1.01	1.06	31.6
18	R2	120	3.0	133	3.0	0.501	12.7	LOS B	4.1	105.6	0.84	1.01	1.06	30.7
Approach		350	4.2	389	4.2	0.501	16.6	LOS B	4.1	105.6	0.84	1.01	1.06	31.3
East: WB Old Pacific Highway														
6	T1	195	4.0	217	4.0	0.342	7.4	LOS A	2.2	55.9	0.71	0.74	0.71	35.6
16	R2	80	3.0	89	3.0	0.342	7.4	LOS A	2.2	55.9	0.71	0.74	0.71	34.6
Approach		275	3.7	306	3.7	0.342	7.4	LOS A	2.2	55.9	0.71	0.74	0.71	35.3
West: EB Dike Access Road														
5	L2	325	3.0	361	3.0	0.618	9.8	LOS A	0.0	0.0	0.00	0.54	0.00	36.8
2	T1	465	4.0	517	4.0	0.618	3.8	LOS A	0.0	0.0	0.00	0.54	0.00	36.7
Approach		790	3.6	878	3.6	0.618	6.3	LOS A	0.0	0.0	0.00	0.54	0.00	36.8
All Vehicles		1415	3.8	1572	3.8	0.618	9.0	LOS A	4.1	105.6	0.35	0.69	0.40	35.0

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: SCJ ALLIANCE | Licence: PLUS / 1PC | Processed: Wednesday, September 20, 2023 10:43:16 AM

Project: N:\Projects\5528 Trammell Crow Company\23-000277 TCC Woodland Industrial\03-Analysis\Operations\RAB\2025 without project.sip9

Intersection						
Int Delay, s/veh	3.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖		↖	↖
Traffic Vol, veh/h	70	155	45	210	105	10
Future Vol, veh/h	70	155	45	210	105	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	200	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	12	4	11	2	6	17
Mvmt Flow	91	201	58	273	136	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	331	0	-	0	578 195
Stage 1	-	-	-	-	195 -
Stage 2	-	-	-	-	383 -
Critical Hdwy	4.22	-	-	-	6.46 6.37
Critical Hdwy Stg 1	-	-	-	-	5.46 -
Critical Hdwy Stg 2	-	-	-	-	5.46 -
Follow-up Hdwy	2.308	-	-	-	3.554 3.453
Pot Cap-1 Maneuver	1174	-	-	-	471 810
Stage 1	-	-	-	-	828 -
Stage 2	-	-	-	-	681 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1174	-	-	-	434 810
Mov Cap-2 Maneuver	-	-	-	-	525 -
Stage 1	-	-	-	-	763 -
Stage 2	-	-	-	-	681 -

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	13.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1174	-	-	-	525	810
HCM Lane V/C Ratio	0.077	-	-	-	0.26	0.016
HCM Control Delay (s)	8.3	-	-	-	14.2	9.5
HCM Lane LOS	A	-	-	-	B	A
HCM 95th %tile Q(veh)	0.3	-	-	-	1	0

Intersection						
Int Delay, s/veh	2.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	145	115	25	190	75	20
Future Vol, veh/h	145	115	25	190	75	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	7	3	24	2	3	12
Mvmt Flow	186	147	32	244	96	26

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	333	0	568 260
Stage 1	-	-	-	-	260 -
Stage 2	-	-	-	-	308 -
Critical Hdwy	-	-	4.34	-	6.43 6.32
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	-	-	2.416	-	3.527 3.408
Pot Cap-1 Maneuver	-	-	1113	-	483 755
Stage 1	-	-	-	-	781 -
Stage 2	-	-	-	-	743 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1113	-	467 755
Mov Cap-2 Maneuver	-	-	-	-	554 -
Stage 1	-	-	-	-	781 -
Stage 2	-	-	-	-	718 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1	12.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	587	-	-	1113	-
HCM Lane V/C Ratio	0.207	-	-	0.029	-
HCM Control Delay (s)	12.7	-	-	8.3	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.8	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	185	5	5	70	15	5
Future Vol, veh/h	185	5	5	70	15	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	4	20	0	4	0	50
Mvmt Flow	264	7	7	100	21	7

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	271	0	382 268
Stage 1	-	-	-	-	268 -
Stage 2	-	-	-	-	114 -
Critical Hdwy	-	-	4.1	-	6.4 6.7
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	-	-	2.2	-	3.5 3.75
Pot Cap-1 Maneuver	-	-	1304	-	624 668
Stage 1	-	-	-	-	782 -
Stage 2	-	-	-	-	916 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1304	-	620 668
Mov Cap-2 Maneuver	-	-	-	-	620 -
Stage 1	-	-	-	-	782 -
Stage 2	-	-	-	-	911 -

Approach	EB	WB	NE
HCM Control Delay, s	0	0.5	11
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	631	-	-	1304	-
HCM Lane V/C Ratio	0.045	-	-	0.005	-
HCM Control Delay (s)	11	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection												
Int Delay, s/veh	7.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	100	60	105	45	5	20	20	120	5	35	5
Future Vol, veh/h	15	100	60	105	45	5	20	20	120	5	35	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	21	1	0	3	0	0	0	12	3	0	8	14
Mvmt Flow	20	135	81	142	61	7	27	27	162	7	47	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	68	0	0	216	0	0	592	568	176	659	605	65
Stage 1	-	-	-	-	-	-	216	216	-	349	349	-
Stage 2	-	-	-	-	-	-	376	352	-	310	256	-
Critical Hdwy	4.31	-	-	4.13	-	-	7.1	6.62	6.23	7.1	6.58	6.34
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.62	-	6.1	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.62	-	6.1	5.58	-
Follow-up Hdwy	2.389	-	-	2.227	-	-	3.5	4.108	3.327	3.5	4.072	3.426
Pot Cap-1 Maneuver	1421	-	-	1348	-	-	421	419	865	380	404	966
Stage 1	-	-	-	-	-	-	791	706	-	671	623	-
Stage 2	-	-	-	-	-	-	649	614	-	705	685	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1421	-	-	1348	-	-	340	367	865	264	354	966
Mov Cap-2 Maneuver	-	-	-	-	-	-	340	367	-	264	354	-
Stage 1	-	-	-	-	-	-	778	695	-	660	554	-
Stage 2	-	-	-	-	-	-	525	546	-	542	674	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			5.4			13.6			16.8		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	635	1421	-	-	1348	-	-	366
HCM Lane V/C Ratio	0.34	0.014	-	-	0.105	-	-	0.166
HCM Control Delay (s)	13.6	7.6	0	-	8	0	-	16.8
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.5	0	-	-	0.4	-	-	0.6

Lanes, Volumes, Timings

Projected 2025 Without Project

8: I-5 SB On-Ramp/Pacific Ave & Goerig St/Lewis River Rd (SR 503)

PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	360	220	360	425	290	0	0	0	320	195	0
Future Volume (vph)	55	360	220	360	425	290	0	0	0	320	195	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	200		0	0		0	100		0
Storage Lanes	2		0	1		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1913			492			1514			1436	
Travel Time (s)		43.5			11.2			34.4			32.6	
Turn Type	pm+pt	NA		pm+pt	NA	Perm				Split	NA	
Protected Phases	1	6		5	2					4	4	
Permitted Phases	6			2		2						
Detector Phase	1	6		5	2	2				4	4	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0				3.0	3.0	
Minimum Split (s)	9.0	18.0		9.0	22.0	22.0				32.0	32.0	
Total Split (s)	20.0	68.0		42.0	90.0	90.0				45.0	45.0	
Total Split (%)	12.9%	43.9%		27.1%	58.1%	58.1%				29.0%	29.0%	
Maximum Green (s)	16.0	64.0		38.0	86.0	86.0				41.0	41.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0				3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0				1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0				0.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0				4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0				3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max				Min	Min	
Walk Time (s)		7.0			7.0	7.0				7.0	7.0	
Flash Dont Walk (s)		7.0			11.0	11.0				21.0	21.0	
Pedestrian Calls (#/hr)		2			2	2				0	0	

Intersection Summary

Area Type: Other
 Cycle Length: 155
 Actuated Cycle Length: 155
 Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green, Master Intersection
 Natural Cycle: 65
 Control Type: Actuated-Coordinated

Splits and Phases: 8: I-5 SB On-Ramp/Pacific Ave & Goerig St/Lewis River Rd (SR 503)



HCM 6th Signalized Intersection Summary
 8: I-5 SB On-Ramp/Pacific Ave & Goerig St/Lewis River Rd (SR 503)

Projected 2025 Without Project
 PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	360	220	360	425	290	0	0	0	320	195	0
Future Volume (veh/h)	55	360	220	360	425	290	0	0	0	320	195	0
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1870	1885	1870	1811	1856	1826				1856	1856	0
Adj Flow Rate, veh/h	57	371	227	371	438	0				330	201	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	2	1	2	6	3	5				3	3	0
Cap, veh/h	675	1326	799	653	1297					354	372	
Arrive On Green	0.02	0.62	0.62	0.18	1.00	0.00				0.20	0.20	0.00
Sat Flow, veh/h	1781	2149	1295	1725	1856	1547				1767	1856	0
Grp Volume(v), veh/h	57	308	290	371	438	0				330	201	0
Grp Sat Flow(s),veh/h/ln	1781	1791	1652	1725	1856	1547				1767	1856	0
Q Serve(g_s), s	1.8	12.3	12.6	12.7	0.0	0.0				28.5	15.1	0.0
Cycle Q Clear(g_c), s	1.8	12.3	12.6	12.7	0.0	0.0				28.5	15.1	0.0
Prop In Lane	1.00		0.78	1.00		1.00				1.00		0.00
Lane Grp Cap(c), veh/h	675	1105	1019	653	1297					354	372	
V/C Ratio(X)	0.08	0.28	0.28	0.57	0.34					0.93	0.54	
Avail Cap(c_a), veh/h	817	1105	1019	895	1297					467	491	
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67				1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.84	0.84	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	10.4	13.7	13.8	7.7	0.0	0.0				60.9	55.5	0.0
Incr Delay (d2), s/veh	0.1	0.6	0.7	0.7	0.6	0.0				21.7	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	5.3	5.0	3.7	0.2	0.0				14.9	7.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.4	14.4	14.5	8.3	0.6	0.0				82.6	56.8	0.0
LnGrp LOS	B	B	B	A	A					F	E	
Approach Vol, veh/h		655			809	A					531	A
Approach Delay, s/veh		14.1			4.1						72.8	
Approach LOS		B			A						E	
Timer - Assigned Phs	1	2		4	5	6						
Phs Duration (G+Y+Rc), s	7.6	112.3		35.1	20.3	99.6						
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0						
Max Green Setting (Gmax), s	16.0	86.0		41.0	38.0	64.0						
Max Q Clear Time (g_c+I1), s	3.8	2.0		30.5	14.7	14.6						
Green Ext Time (p_c), s	0.1	1.9		0.6	1.6	2.7						

Intersection Summary

HCM 6th Ctrl Delay	25.7
HCM 6th LOS	C

Notes

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

Lanes, Volumes, Timings
 9: I-5 NB Off-Ramp/Atlantic Ave & Lewis River Rd (SR 503)

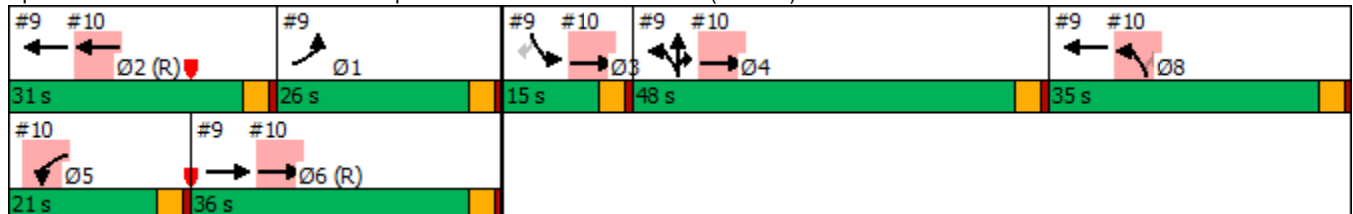
Projected 2025 Without Project
 PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	195	490	0	0	535	120	370	55	580	35	0	140
Future Volume (vph)	195	490	0	0	535	120	370	55	580	35	0	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	0		0	75		0
Storage Lanes	1		0	0		0	0		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30				30
Link Distance (ft)		492			137			823				446
Travel Time (s)		11.2			3.1			18.7				10.1
Turn Type	Prot	NA			NA		Split	NA	Prot	Prot		Perm
Protected Phases	1	6			2 8		4	4	4	3		
Permitted Phases												3
Detector Phase	1	6			2 8		4	4	4	3		3
Switch Phase												
Minimum Initial (s)	5.0	5.0					5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	9.0	25.0					32.0	32.0	32.0	13.0		13.0
Total Split (s)	26.0	36.0					48.0	48.0	48.0	15.0		15.0
Total Split (%)	16.8%	23.2%					31.0%	31.0%	31.0%	9.7%		9.7%
Maximum Green (s)	22.0	32.0					44.0	44.0	44.0	11.0		11.0
Yellow Time (s)	3.0	3.0					3.0	3.0	3.0	3.0		3.0
All-Red Time (s)	1.0	1.0					1.0	1.0	1.0	1.0		1.0
Lost Time Adjust (s)	0.0	0.0					0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.0	4.0					4.0	4.0	4.0	4.0		4.0
Lead/Lag	Lag	Lag					Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0	3.0		3.0
Recall Mode	None	C-Min					None	None	None	None		None
Walk Time (s)		7.0					7.0	7.0	7.0			
Flash Dont Walk (s)		14.0					21.0	21.0	21.0			
Pedestrian Calls (#/hr)		0					0	0	0			

Intersection Summary

Area Type: Other
 Cycle Length: 155
 Actuated Cycle Length: 155
 Offset: 3 (2%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 115
 Control Type: Actuated-Coordinated

Splits and Phases: 9: I-5 NB Off-Ramp/Atlantic Ave & Lewis River Rd (SR 503)



Lanes, Volumes, Timings
 9: I-5 NB Off-Ramp/Atlantic Ave & Lewis River Rd (SR 503)

Projected 2025 Without Project
 PM Peak Hour

Lane Group	Ø2	Ø5	Ø8
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Right Turn on Red			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Turn Type			
Protected Phases	2	5	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	27.0	9.0	31.0
Total Split (s)	31.0	21.0	35.0
Total Split (%)	20%	14%	23%
Maximum Green (s)	27.0	17.0	31.0
Yellow Time (s)	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lead	
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	C-Min	None	None
Walk Time (s)	7.0		7.0
Flash Dont Walk (s)	16.0		20.0
Pedestrian Calls (#/hr)	0		0
Intersection Summary			

HCM Signalized Intersection Capacity Analysis
 9: I-5 NB Off-Ramp/Atlantic Ave & Lewis River Rd (SR 503)

Projected 2025 Without Project
 PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	195	490	0	0	535	120	370	55	580	35	0	140	
Future Volume (vph)	195	490	0	0	535	120	370	55	580	35	0	140	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95			0.95			1.00	1.00	1.00		1.00	
Frt	1.00	1.00			0.97			1.00	0.85	1.00		0.85	
Flt Protected	0.95	1.00			1.00			0.96	1.00	0.95		1.00	
Satd. Flow (prot)	1770	3539			3382			1736	1568	1805		1553	
Flt Permitted	0.95	1.00			1.00			0.96	1.00	0.95		1.00	
Satd. Flow (perm)	1770	3539			3382			1736	1568	1805		1553	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Adj. Flow (vph)	201	505	0	0	552	124	381	57	598	36	0	144	
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	350	0	0	134	
Lane Group Flow (vph)	201	505	0	0	663	0	0	438	248	36	0	10	
Heavy Vehicles (%)	2%	2%	0%	0%	4%	3%	5%	4%	3%	0%	0%	4%	
Turn Type	Prot	NA			NA		Split	NA	Prot	Prot		Perm	
Protected Phases	1	6			2		4	4	4	3			
Permitted Phases												3	
Actuated Green, G (s)	24.1	39.1			60.9			43.6	43.6	10.4		10.4	
Effective Green, g (s)	24.1	39.1			60.9			43.6	43.6	10.4		10.4	
Actuated g/C Ratio	0.16	0.25			0.39			0.28	0.28	0.07		0.07	
Clearance Time (s)	4.0	4.0						4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	275	892			1328			488	441	121		104	
v/s Ratio Prot	c0.11	c0.14			c0.20			c0.25	0.16	c0.02			
v/s Ratio Perm												0.01	
v/c Ratio	0.73	0.57			0.50			0.90	0.56	0.30		0.09	
Uniform Delay, d1	62.4	50.6			35.5			53.6	47.6	68.8		67.9	
Progression Factor	1.01	1.01			0.06			1.00	1.00	1.00		1.00	
Incremental Delay, d2	8.6	2.3			0.2			18.9	1.6	1.4		0.4	
Delay (s)	71.6	53.2			2.2			72.4	49.2	70.2		68.3	
Level of Service	E	D			A			E	D	E		E	
Approach Delay (s)		58.4			2.2			59.0			68.6		
Approach LOS		E			A			E			E		
Intersection Summary													
HCM 2000 Control Delay			44.7									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.67										
Actuated Cycle Length (s)			155.0									Sum of lost time (s)	20.0
Intersection Capacity Utilization			69.5%									ICU Level of Service	C
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings
10: CC St & Lewis River Rd (SR 503)

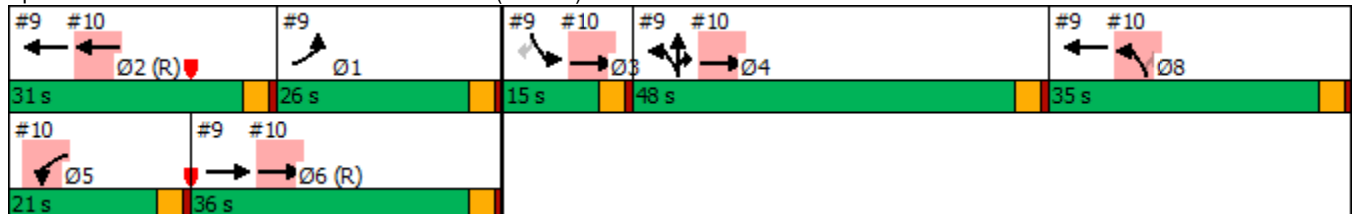
Projected 2025 Without Project
PM Peak Hour

	→	↘	↙	←	↖	↗				
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø3	Ø4	Ø6
Lane Configurations	↑↑		↘	↑↑	↘	↗				
Traffic Volume (vph)	795	310	95	440	210	115				
Future Volume (vph)	795	310	95	440	210	115				
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900				
Storage Length (ft)		0	150		0	150				
Storage Lanes		0	2		1	1				
Taper Length (ft)			25		25					
Right Turn on Red		Yes			Yes					
Link Speed (mph)	30			30	30					
Link Distance (ft)	137			1875	856					
Travel Time (s)	3.1			42.6	19.5					
Turn Type	NA		Prot	NA	Prot	Perm				
Protected Phases	3 4 6		5	2	8		1	3	4	6
Permitted Phases						8				
Detector Phase	3 4 6		5	2	8	8				
Switch Phase										
Minimum Initial (s)			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)			9.0	27.0	31.0	31.0	9.0	13.0	32.0	25.0
Total Split (s)			21.0	31.0	35.0	35.0	26.0	15.0	48.0	36.0
Total Split (%)			13.5%	20.0%	22.6%	22.6%	17%	10%	31%	23%
Maximum Green (s)			17.0	27.0	31.0	31.0	22.0	11.0	44.0	32.0
Yellow Time (s)			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0	0.0	0.0	0.0				
Total Lost Time (s)			4.0	4.0	4.0	4.0				
Lead/Lag			Lead	Lead			Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Vehicle Extension (s)			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode			None	C-Min	None	None	None	None	None	C-Min
Walk Time (s)			7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)			16.0	20.0	20.0	20.0			21.0	14.0
Pedestrian Calls (#/hr)			0	0	0	0			0	0

Intersection Summary

Area Type: Other
 Cycle Length: 155
 Actuated Cycle Length: 155
 Offset: 3 (2%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 115
 Control Type: Actuated-Coordinated

Splits and Phases: 10: CC St & Lewis River Rd (SR 503)



HCM Signalized Intersection Capacity Analysis
 10: CC St & Lewis River Rd (SR 503)

Projected 2025 Without Project
 PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑↑	↵	↵
Traffic Volume (vph)	795	310	95	440	210	115
Future Volume (vph)	795	310	95	440	210	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3367		1787	3471	1752	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3367		1787	3471	1752	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	811	316	97	449	214	117
RTOR Reduction (vph)	24	0	0	0	0	91
Lane Group Flow (vph)	1103	0	97	449	214	26
Heavy Vehicles (%)	3%	2%	1%	4%	3%	2%
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	3 4 6		5	2	8	
Permitted Phases						8
Actuated Green, G (s)	101.1		13.3	28.3	28.6	28.6
Effective Green, g (s)	101.1		13.3	28.3	28.6	28.6
Actuated g/C Ratio	0.65		0.09	0.18	0.18	0.18
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2196		153	633	323	292
v/s Ratio Prot	c0.33		0.05	c0.13	c0.12	
v/s Ratio Perm						0.02
v/c Ratio	0.50		0.63	0.71	0.66	0.09
Uniform Delay, d1	13.9		68.5	59.5	58.7	52.4
Progression Factor	0.51		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1		8.3	6.6	5.0	0.1
Delay (s)	7.3		76.8	66.1	63.8	52.6
Level of Service	A		E	E	E	D
Approach Delay (s)	7.3			68.0	59.8	
Approach LOS	A			E	E	

Intersection Summary			
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	155.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection						
Int Delay, s/veh	4.1					
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	110	0	310	35	0	175
Future Vol, veh/h	110	0	310	35	0	175
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	-	1	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	16	0	6	20	0	8
Mvmt Flow	116	0	326	37	0	184

Major/Minor	Major2	Minor2
Conflicting Flow All	-	0
Stage 1	-	-
Stage 2	-	-
Critical Hdwy	-	-
Critical Hdwy Stg 1	-	-
Critical Hdwy Stg 2	-	-
Follow-up Hdwy	-	-
Pot Cap-1 Maneuver	-	0
Stage 1	-	0
Stage 2	-	0
Platoon blocked, %	-	-
Mov Cap-1 Maneuver	-	-
Mov Cap-2 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-

Approach	SB	NE
HCM Control Delay, s	0	12.2
HCM LOS		B

Minor Lane/Major Mvmt	NELn1	SBT	SBR
Capacity (veh/h)	684	-	-
HCM Lane V/C Ratio	0.269	-	-
HCM Control Delay (s)	12.2	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	1.1	-	-

Queuing and Blocking Report
 Projected 2025 Without Project

PM Peak Hour

Intersection: 4: Guild Rd & Schurman Way

Movement	EB	WB	SB	SB
Directions Served	L	TR	L	R
Maximum Queue (ft)	63	18	83	57
Average Queue (ft)	17	1	36	11
95th Queue (ft)	51	13	65	39
Link Distance (ft)		1097		1932
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150		200	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: N Pekin Rd & Guild Rd/W Scott Ave

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	9	87	81
Average Queue (ft)	0	10	39
95th Queue (ft)	4	47	68
Link Distance (ft)	1097	2518	4798
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Goerig Rd & N Pekin Rd/Davidson Ave

Movement	WB	NE
Directions Served	LT	LR
Maximum Queue (ft)	18	48
Average Queue (ft)	1	13
95th Queue (ft)	8	39
Link Distance (ft)	797	627
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
 Projected 2025 Without Project

PM Peak Hour

Intersection: 7: S Pekin Rd/5th St & Davidson Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	83	76	67
Average Queue (ft)	2	14	41	29
95th Queue (ft)	19	52	65	58
Link Distance (ft)	797	1220	446	343
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: I-5 SB On-Ramp/Pacific Ave & Goerig St/Lewis River Rd (SR 503)

Movement	EB	EB	EB	WB	WB	WB	SB	SB
Directions Served	L	T	TR	L	T	R	L	T
Maximum Queue (ft)	125	174	378	224	302	148	125	622
Average Queue (ft)	29	104	176	133	125	19	119	379
95th Queue (ft)	77	203	325	226	248	82	141	591
Link Distance (ft)			1848		420	420		1372
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	150	150		200			100	
Storage Blk Time (%)	0	0	11	2	2		46	23
Queuing Penalty (veh)	0	1	26	9	6		90	72

Intersection: 9: I-5 NB Off-Ramp/Atlantic Ave & Lewis River Rd (SR 503)

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	T	TR	LT	R	L	R
Maximum Queue (ft)	224	343	347	60	66	817	818	96	146
Average Queue (ft)	160	171	196	18	16	774	785	32	56
95th Queue (ft)	253	299	299	49	47	878	825	74	109
Link Distance (ft)		420	420	52	52	769	769		370
Upstream Blk Time (%)		0	0	3	2	52	78		
Queuing Penalty (veh)		0	0	9	5	0	0		
Storage Bay Dist (ft)	200							75	
Storage Blk Time (%)	9	2						4	5
Queuing Penalty (veh)	23	3						5	2

Queuing and Blocking Report
 Projected 2025 Without Project

PM Peak Hour

Intersection: 10: CC St & Lewis River Rd (SR 503)

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	39	69	162	174	1151	390	175
Average Queue (ft)	2	52	121	165	563	203	83
95th Queue (ft)	18	70	196	206	1191	349	188
Link Distance (ft)	52	52			1840	809	
Upstream Blk Time (%)	0	25			2		
Queuing Penalty (veh)	2	136			0		
Storage Bay Dist (ft)			150	150			150
Storage Blk Time (%)			3	43	22	21	0
Queuing Penalty (veh)			7	95	71	24	0

Intersection: 11: W Scott Ave & Pacific St/I-5 SB Off Ramp

Movement	NB	SB	NE
Directions Served	L	TR	R
Maximum Queue (ft)	98	20	96
Average Queue (ft)	32	1	50
95th Queue (ft)	74	11	80
Link Distance (ft)	186	1110	2518
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 585

MOVEMENT SUMMARY

Site: 1 [Dike Access Road at Schurman Way (Site Folder: General)]

Projected 2025 with Project - Industrial Park
 PM Peak Hour
 Site Category: (None)
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] ft				
South: NB Schuman Way														
3	L2	20	6.0	22	6.0	0.725	17.3	LOS B	8.7	221.9	0.87	1.00	1.18	33.4
8	T1	60	0.0	66	0.0	0.725	11.2	LOS B	8.7	221.9	0.87	1.00	1.18	33.6
18	R2	560	3.0	615	3.0	0.725	11.4	LOS B	8.7	221.9	0.87	1.00	1.18	32.6
Approach		640	2.8	703	2.8	0.725	11.6	LOS B	8.7	221.9	0.87	1.00	1.18	32.7
East: WB Dike Access Road														
1	L2	130	9.0	143	9.0	0.432	10.3	LOS B	3.3	85.0	0.37	0.52	0.37	35.8
6	T1	125	3.0	137	3.0	0.432	4.6	LOS A	3.3	85.0	0.37	0.52	0.37	36.0
16	R2	245	2.0	269	2.0	0.432	4.5	LOS A	3.3	85.0	0.37	0.52	0.37	35.0
Approach		500	4.1	549	4.1	0.432	6.0	LOS A	3.3	85.0	0.37	0.52	0.37	35.5
North: SB Driveway														
7	L2	255	0.0	280	0.0	0.305	11.1	LOS B	1.8	44.0	0.50	0.68	0.50	34.3
4	T1	60	0.0	66	0.0	0.305	5.5	LOS A	1.8	44.0	0.50	0.68	0.50	34.2
14	R2	5	0.0	5	0.0	0.305	5.5	LOS A	1.8	44.0	0.50	0.68	0.50	33.3
Approach		320	0.0	352	0.0	0.305	9.9	LOS A	1.8	44.0	0.50	0.68	0.50	34.3
West: EB Dike Access Road														
5	L2	5	0.0	5	0.0	0.281	12.0	LOS B	1.6	42.1	0.61	0.65	0.61	35.8
2	T1	215	4.0	236	4.0	0.281	6.6	LOS A	1.6	42.1	0.61	0.65	0.61	35.7
12	R2	30	0.0	33	0.0	0.281	6.4	LOS A	1.6	42.1	0.61	0.65	0.61	34.7
Approach		250	3.4	275	3.4	0.281	6.7	LOS A	1.6	42.1	0.61	0.65	0.61	35.5
All Vehicles		1710	2.7	1879	2.7	0.725	8.9	LOS A	8.7	221.9	0.62	0.75	0.73	34.2

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [Dike Access Road at I-5 SB Ramps (Site Folder: General)]

Projected 2025 with Project - Industrial Park
 PM Peak Hour
 Site Category: (None)
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] ft				
East: WB Dike Access Road														
1	L2	95	7.0	102	7.0	0.336	9.8	LOS A	0.0	0.0	0.00	0.46	0.00	37.4
6	T1	345	4.0	371	4.0	0.336	3.8	LOS A	0.0	0.0	0.00	0.46	0.00	37.4
Approach		440	4.6	473	4.6	0.336	5.1	LOS A	0.0	0.0	0.00	0.46	0.00	37.4
North: I-5 SB Off-Ramp														
7	L2	140	6.0	151	6.0	0.283	12.3	LOS B	1.5	39.2	0.56	0.72	0.56	34.9
4	T1	5	20.0	5	20.0	0.283	7.0	LOS A	1.5	39.2	0.56	0.72	0.56	34.7
14	R2	125	3.0	134	3.0	0.283	6.3	LOS A	1.5	39.2	0.56	0.72	0.56	33.9
Approach		270	4.9	290	4.9	0.283	9.4	LOS A	1.5	39.2	0.56	0.72	0.56	34.4
West: EB Dike Access Road														
2	T1	750	3.0	806	3.0	0.957	20.0	LOS E	30.9	790.2	1.00	1.17	1.74	30.0
12	R2	295	3.0	317	3.0	0.957	20.1	LOS E	30.9	790.2	1.00	1.17	1.74	29.2
Approach		1045	3.0	1124	3.0	0.957	20.0	LOS C	30.9	790.2	1.00	1.17	1.74	29.8
All Vehicles		1755	3.7	1887	3.7	0.957	14.7	LOS B	30.9	790.2	0.68	0.93	1.12	32.1

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: SCJ ALLIANCE | Licence: PLUS / 1PC | Processed: Wednesday, October 4, 2023 1:26:53 PM

Project: N:\Projects\5528 Trammell Crow Company\23-000277 TCC Woodland Industrial\03-Analysis\Operations\RAB\2025 with project-Industrial Park.sjp9

MOVEMENT SUMMARY

Site: 3 [Old Pacific Highway at I-5 NB Ramps (Site Folder: General)]

Projected 2025 with Project - Industrial Park
 PM Peak Hour
 Site Category: (None)
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist ft				
South: I-5 NB Off-Ramp														
3	L2	225	5.0	250	5.0	0.564	23.4	LOS C	5.4	140.1	0.91	1.12	1.33	29.6
8	T1	5	0.0	6	0.0	0.564	17.0	LOS B	5.4	140.1	0.91	1.12	1.33	29.7
18	R2	120	3.0	133	3.0	0.564	17.4	LOS B	5.4	140.1	0.91	1.12	1.33	28.9
Approach		350	4.2	389	4.2	0.564	21.3	LOS C	5.4	140.1	0.91	1.12	1.33	29.4
East: WB Old Pacific Highway														
6	T1	200	4.0	222	4.0	0.375	8.2	LOS A	2.5	63.3	0.77	0.80	0.77	35.4
16	R2	80	3.0	89	3.0	0.375	8.2	LOS A	2.5	63.3	0.77	0.80	0.77	34.3
Approach		280	3.7	311	3.7	0.375	8.2	LOS A	2.5	63.3	0.77	0.80	0.77	35.1
West: EB Dike Access Road														
5	L2	400	3.0	444	3.0	0.704	9.8	LOS A	0.0	0.0	0.00	0.55	0.00	36.7
2	T1	500	4.0	556	4.0	0.704	3.8	LOS A	0.0	0.0	0.00	0.55	0.00	36.6
Approach		900	3.6	1000	3.6	0.704	6.5	LOS A	0.0	0.0	0.00	0.55	0.00	36.6
All Vehicles		1530	3.7	1700	3.7	0.704	10.2	LOS B	5.4	140.1	0.35	0.72	0.44	34.4

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: SCJ ALLIANCE | Licence: PLUS / 1PC | Processed: Wednesday, October 4, 2023 1:26:54 PM

Project: N:\Projects\5528 Trammell Crow Company\23-000277 TCC Woodland Industrial\03-Analysis\Operations\RAB\2025 with project-Industrial Park.sjp9

Intersection						
Int Delay, s/veh	4.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↑	↔		↔	↔
Traffic Vol, veh/h	140	175	65	245	105	20
Future Vol, veh/h	140	175	65	245	105	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	200	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	12	4	11	2	6	17
Mvmt Flow	182	227	84	318	136	26

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	402	0	-	0	834 243
Stage 1	-	-	-	-	243 -
Stage 2	-	-	-	-	591 -
Critical Hdwy	4.22	-	-	-	6.46 6.37
Critical Hdwy Stg 1	-	-	-	-	5.46 -
Critical Hdwy Stg 2	-	-	-	-	5.46 -
Follow-up Hdwy	2.308	-	-	-	3.554 3.453
Pot Cap-1 Maneuver	1105	-	-	-	333 760
Stage 1	-	-	-	-	788 -
Stage 2	-	-	-	-	546 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1105	-	-	-	278 760
Mov Cap-2 Maneuver	-	-	-	-	397 -
Stage 1	-	-	-	-	658 -
Stage 2	-	-	-	-	546 -

Approach	EB	WB	SB
HCM Control Delay, s	4	0	17.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1105	-	-	-	397	760
HCM Lane V/C Ratio	0.165	-	-	-	0.343	0.034
HCM Control Delay (s)	8.9	-	-	-	18.7	9.9
HCM Lane LOS	A	-	-	-	C	A
HCM 95th %tile Q(veh)	0.6	-	-	-	1.5	0.1

Intersection						
Int Delay, s/veh	3.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	170	115	35	210	110	30
Future Vol, veh/h	170	115	35	210	110	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	7	3	24	2	3	12
Mvmt Flow	218	147	45	269	141	38

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	365	0	651 292
Stage 1	-	-	-	-	292 -
Stage 2	-	-	-	-	359 -
Critical Hdwy	-	-	4.34	-	6.43 6.32
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	-	-	2.416	-	3.527 3.408
Pot Cap-1 Maneuver	-	-	1082	-	432 724
Stage 1	-	-	-	-	756 -
Stage 2	-	-	-	-	704 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1082	-	411 724
Mov Cap-2 Maneuver	-	-	-	-	510 -
Stage 1	-	-	-	-	756 -
Stage 2	-	-	-	-	670 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	14.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	544	-	-	1082	-
HCM Lane V/C Ratio	0.33	-	-	0.041	-
HCM Control Delay (s)	14.8	-	-	8.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1.4	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	290	5	5	100	15	5
Future Vol, veh/h	290	5	5	100	15	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	4	20	0	4	0	50
Mvmt Flow	414	7	7	143	21	7

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	421	0	575
Stage 1	-	-	-	-	418
Stage 2	-	-	-	-	157
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1149	-	483
Stage 1	-	-	-	-	669
Stage 2	-	-	-	-	876
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1149	-	480
Mov Cap-2 Maneuver	-	-	-	-	480
Stage 1	-	-	-	-	669
Stage 2	-	-	-	-	870

Approach	EB	WB	NE
HCM Control Delay, s	0	0.4	12.7
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	495	-	-	1149	-
HCM Lane V/C Ratio	0.058	-	-	0.006	-
HCM Control Delay (s)	12.7	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection												
Int Delay, s/veh	7.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	190	70	105	70	5	20	20	120	5	35	5
Future Vol, veh/h	15	190	70	105	70	5	20	20	120	5	35	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	21	1	0	3	0	0	0	12	3	0	8	14
Mvmt Flow	20	257	95	142	95	7	27	27	162	7	47	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	102	0	0	352	0	0	755	731	305	822	775	99
Stage 1	-	-	-	-	-	-	345	345	-	383	383	-
Stage 2	-	-	-	-	-	-	410	386	-	439	392	-
Critical Hdwy	4.31	-	-	4.13	-	-	7.1	6.62	6.23	7.1	6.58	6.34
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.62	-	6.1	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.62	-	6.1	5.58	-
Follow-up Hdwy	2.389	-	-	2.227	-	-	3.5	4.108	3.327	3.5	4.072	3.426
Pot Cap-1 Maneuver	1379	-	-	1201	-	-	328	337	732	295	322	925
Stage 1	-	-	-	-	-	-	675	619	-	644	602	-
Stage 2	-	-	-	-	-	-	623	593	-	601	596	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1379	-	-	1201	-	-	253	289	732	191	277	925
Mov Cap-2 Maneuver	-	-	-	-	-	-	253	289	-	191	277	-
Stage 1	-	-	-	-	-	-	663	608	-	632	527	-
Stage 2	-	-	-	-	-	-	493	519	-	439	585	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			4.9			17			21		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	513	1379	-	-	1201	-	-	285
HCM Lane V/C Ratio	0.421	0.015	-	-	0.118	-	-	0.213
HCM Control Delay (s)	17	7.7	0	-	8.4	0	-	21
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	2.1	0	-	-	0.4	-	-	0.8

Lanes, Volumes, Timings

Projected 2025 With Project - Industrial Park

8: I-5 SB On-Ramp/Pacific Ave & Goerig St/Lewis River Rd (SR 503)

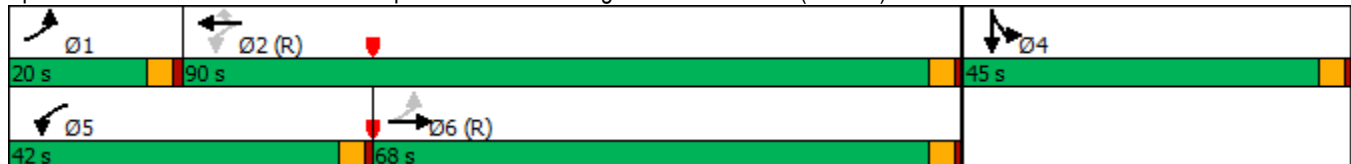
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	390	280	360	450	300	0	0	0	320	220	0
Future Volume (vph)	55	390	280	360	450	300	0	0	0	320	220	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	200		0	0		0	100		0
Storage Lanes	2		0	1		1	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			30				35
Link Distance (ft)		1913			492			1514				1436
Travel Time (s)		52.2			13.4			34.4				28.0
Turn Type	pm+pt	NA		pm+pt	NA	Perm				Split		NA
Protected Phases	1	6		5	2					4		4
Permitted Phases	6			2		2						
Detector Phase	1	6		5	2	2				4		4
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0				3.0		3.0
Minimum Split (s)	9.0	18.0		9.0	22.0	22.0				32.0		32.0
Total Split (s)	20.0	68.0		42.0	90.0	90.0				45.0		45.0
Total Split (%)	12.9%	43.9%		27.1%	58.1%	58.1%				29.0%		29.0%
Maximum Green (s)	16.0	64.0		38.0	86.0	86.0				41.0		41.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0				3.0		3.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0				1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0				0.0		0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0				4.0		4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0				3.0		3.0
Recall Mode	None	C-Max		None	C-Max	C-Max				Min		Min
Walk Time (s)		7.0			7.0	7.0				7.0		7.0
Flash Dont Walk (s)		7.0			11.0	11.0				21.0		21.0
Pedestrian Calls (#/hr)		2			2	2				0		0

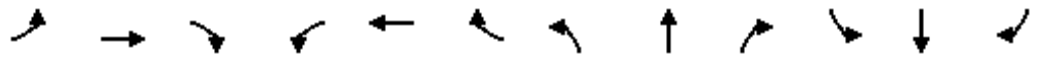
Intersection Summary

Area Type: Other
 Cycle Length: 155
 Actuated Cycle Length: 155
 Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green, Master Intersection
 Natural Cycle: 65
 Control Type: Actuated-Coordinated

Splits and Phases: 8: I-5 SB On-Ramp/Pacific Ave & Goerig St/Lewis River Rd (SR 503)



HCM 6th Signalized Intersection Summary Projected 2025 With Project - Industrial Park
 8: I-5 SB On-Ramp/Pacific Ave & Goerig St/Lewis River Rd (SR 503) PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗	↗				↖	↗	
Traffic Volume (veh/h)	55	390	280	360	450	300	0	0	0	320	220	0
Future Volume (veh/h)	55	390	280	360	450	300	0	0	0	320	220	0
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1870	1885	1870	1811	1856	1826				1856	1856	0
Adj Flow Rate, veh/h	57	402	289	371	464	0				330	227	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	2	1	2	6	3	5				3	3	0
Cap, veh/h	661	1233	877	606	1297					354	372	
Arrive On Green	0.02	0.62	0.62	0.18	1.00	0.00				0.20	0.20	0.00
Sat Flow, veh/h	1781	1998	1422	1725	1856	1547				1767	1856	0
Grp Volume(v), veh/h	57	360	331	371	464	0				330	227	0
Grp Sat Flow(s),veh/h/ln	1781	1791	1629	1725	1856	1547				1767	1856	0
Q Serve(g_s), s	1.8	14.9	15.1	12.7	0.0	0.0				28.5	17.3	0.0
Cycle Q Clear(g_c), s	1.8	14.9	15.1	12.7	0.0	0.0				28.5	17.3	0.0
Prop In Lane	1.00		0.87	1.00		1.00				1.00		0.00
Lane Grp Cap(c), veh/h	661	1105	1005	606	1297					354	372	
V/C Ratio(X)	0.09	0.33	0.33	0.61	0.36					0.93	0.61	
Avail Cap(c_a), veh/h	803	1105	1005	848	1297					467	491	
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67				1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.83	0.83	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	10.4	14.2	14.3	8.2	0.0	0.0				61.0	56.5	0.0
Incr Delay (d2), s/veh	0.1	0.8	0.9	0.8	0.6	0.0				22.0	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	6.5	6.0	3.8	0.2	0.0				14.9	8.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.4	15.0	15.1	9.0	0.6	0.0				82.9	58.1	0.0
LnGrp LOS	B	B	B	A	A					F	E	
Approach Vol, veh/h		748			835	A					557	A
Approach Delay, s/veh		14.7			4.4						72.8	
Approach LOS		B			A						E	
Timer - Assigned Phs	1	2		4	5	6						
Phs Duration (G+Y+Rc), s	7.6	112.4		35.0	20.3	99.6						
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0						
Max Green Setting (Gmax), s	16.0	86.0		41.0	38.0	64.0						
Max Q Clear Time (g_c+I1), s	3.8	2.0		30.5	14.7	17.1						
Green Ext Time (p_c), s	0.1	2.2		0.6	1.6	3.4						

Intersection Summary

HCM 6th Ctrl Delay	25.8
HCM 6th LOS	C

Notes

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

Lanes, Volumes, Timings

Projected 2025 With Project - Industrial Park

9: I-5 NB Off-Ramp/Atlantic Ave & Lewis River Rd (SR 503)

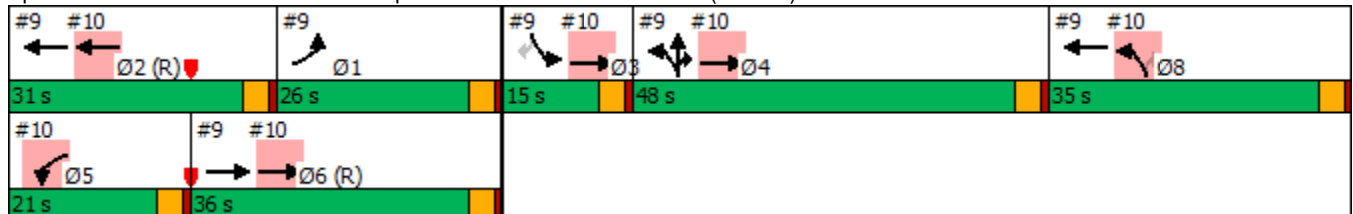
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	195	520	0	0	545	120	395	55	580	35	0	140
Future Volume (vph)	195	520	0	0	545	120	395	55	580	35	0	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	0		0	75		0
Storage Lanes	1		0	0		0	0		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			30			30				35
Link Distance (ft)		492			137			823				446
Travel Time (s)		13.4			3.1			18.7				8.7
Turn Type	Prot	NA			NA		Split	NA	Prot	Prot		Perm
Protected Phases	1	6			2 8		4	4	4	3		
Permitted Phases												3
Detector Phase	1	6			2 8		4	4	4	3		3
Switch Phase												
Minimum Initial (s)	5.0	5.0					5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	9.0	25.0					32.0	32.0	32.0	13.0		13.0
Total Split (s)	26.0	36.0					48.0	48.0	48.0	15.0		15.0
Total Split (%)	16.8%	23.2%					31.0%	31.0%	31.0%	9.7%		9.7%
Maximum Green (s)	22.0	32.0					44.0	44.0	44.0	11.0		11.0
Yellow Time (s)	3.0	3.0					3.0	3.0	3.0	3.0		3.0
All-Red Time (s)	1.0	1.0					1.0	1.0	1.0	1.0		1.0
Lost Time Adjust (s)	0.0	0.0						0.0	0.0	0.0		0.0
Total Lost Time (s)	4.0	4.0						4.0	4.0	4.0		4.0
Lead/Lag	Lag	Lag					Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0	3.0		3.0
Recall Mode	None	C-Min					None	None	None	None		None
Walk Time (s)		7.0					7.0	7.0	7.0			
Flash Dont Walk (s)		14.0					21.0	21.0	21.0			
Pedestrian Calls (#/hr)		0					0	0	0			

Intersection Summary

Area Type: Other
 Cycle Length: 155
 Actuated Cycle Length: 155
 Offset: 3 (2%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 125
 Control Type: Actuated-Coordinated

Splits and Phases: 9: I-5 NB Off-Ramp/Atlantic Ave & Lewis River Rd (SR 503)
























Lanes, Volumes, Timings
 9: I-5 NB Off-Ramp/Atlantic Ave & Lewis River Rd (SR 503)

Projected 2025 With Project - Industrial Park

PM Peak Hour

Lane Group	Ø2	Ø5	Ø8
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Right Turn on Red			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Turn Type			
Protected Phases	2	5	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	27.0	9.0	31.0
Total Split (s)	31.0	21.0	35.0
Total Split (%)	20%	14%	23%
Maximum Green (s)	27.0	17.0	31.0
Yellow Time (s)	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lead	
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	C-Min	None	None
Walk Time (s)	7.0		7.0
Flash Dont Walk (s)	16.0		20.0
Pedestrian Calls (#/hr)	0		0
Intersection Summary			

HCM Signalized Intersection Capacity Analysis Projected 2025 With Project - Industrial Park
 9: I-5 NB Off-Ramp/Atlantic Ave & Lewis River Rd (SR 503) PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 								
Traffic Volume (vph)	195	520	0	0	545	120	395	55	580	35	0	140	
Future Volume (vph)	195	520	0	0	545	120	395	55	580	35	0	140	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95			0.95			1.00	1.00	1.00		1.00	
Frt	1.00	1.00			0.97			1.00	0.85	1.00		0.85	
Flt Protected	0.95	1.00			1.00			0.96	1.00	0.95		1.00	
Satd. Flow (prot)	1770	3539			3383			1736	1568	1805		1553	
Flt Permitted	0.95	1.00			1.00			0.96	1.00	0.95		1.00	
Satd. Flow (perm)	1770	3539			3383			1736	1568	1805		1553	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Adj. Flow (vph)	201	536	0	0	562	124	407	57	598	36	0	144	
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	329	0	0	134	
Lane Group Flow (vph)	201	536	0	0	674	0	0	464	269	36	0	10	
Heavy Vehicles (%)	2%	2%	0%	0%	4%	3%	5%	4%	3%	0%	0%	4%	
Turn Type	Prot	NA			NA		Split	NA	Prot	Prot		Perm	
Protected Phases	1	6			2 8		4	4	4	3			
Permitted Phases												3	
Actuated Green, G (s)	23.6	37.7			60.4			44.2	44.2	10.8		10.8	
Effective Green, g (s)	23.6	37.7			60.4			44.2	44.2	10.8		10.8	
Actuated g/C Ratio	0.15	0.24			0.39			0.29	0.29	0.07		0.07	
Clearance Time (s)	4.0	4.0						4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	269	860			1318			495	447	125		108	
v/s Ratio Prot	c0.11	c0.15			c0.20			c0.27	0.17	c0.02			
v/s Ratio Perm												0.01	
v/c Ratio	0.75	0.62			0.51			0.94	0.60	0.29		0.09	
Uniform Delay, d1	62.8	52.3			36.0			54.0	47.8	68.4		67.5	
Progression Factor	0.98	0.98			0.06			1.00	1.00	1.00		1.00	
Incremental Delay, d2	9.5	3.0			0.2			25.4	2.3	1.3		0.4	
Delay (s)	71.3	54.2			2.6			79.5	50.1	69.7		67.9	
Level of Service	E	D			A			E	D	E		E	
Approach Delay (s)		58.8			2.6			62.9			68.3		
Approach LOS		E			A			E			E		
Intersection Summary													
HCM 2000 Control Delay			46.6									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.69										
Actuated Cycle Length (s)			155.0									Sum of lost time (s)	20.0
Intersection Capacity Utilization			71.1%									ICU Level of Service	C
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings
10: CC St & Lewis River Rd (SR 503)

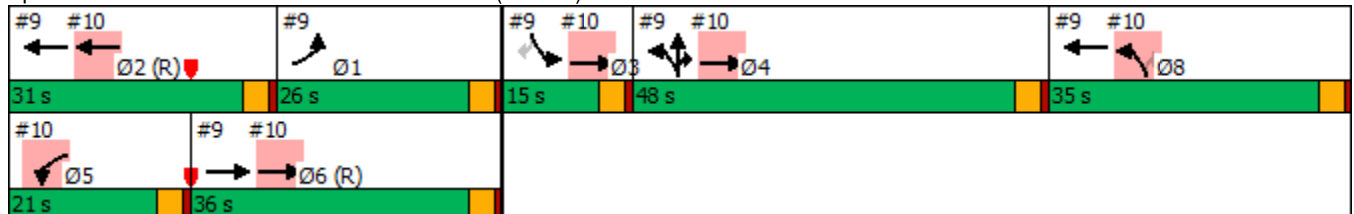
Projected 2025 With Project - Industrial Park
PM Peak Hour

	→	↘	↙	←	↖	↗				
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø3	Ø4	Ø6
Lane Configurations	↑↑		↘	↑↑	↘	↗				
Traffic Volume (vph)	825	310	95	450	210	115				
Future Volume (vph)	825	310	95	450	210	115				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Storage Length (ft)		0	150		0	150				
Storage Lanes		0	2		1	1				
Taper Length (ft)			25		25					
Right Turn on Red		Yes			Yes					
Link Speed (mph)	25			30	25					
Link Distance (ft)	137			1875	856					
Travel Time (s)	3.7			42.6	23.3					
Turn Type	NA		Prot	NA	Prot	Perm				
Protected Phases	3 4 6		5	2	8		1	3	4	6
Permitted Phases						8				
Detector Phase	3 4 6		5	2	8	8				
Switch Phase										
Minimum Initial (s)			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)			9.0	27.0	31.0	31.0	9.0	13.0	32.0	25.0
Total Split (s)			21.0	31.0	35.0	35.0	26.0	15.0	48.0	36.0
Total Split (%)			13.5%	20.0%	22.6%	22.6%	17%	10%	31%	23%
Maximum Green (s)			17.0	27.0	31.0	31.0	22.0	11.0	44.0	32.0
Yellow Time (s)			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0	0.0	0.0	0.0				
Total Lost Time (s)			4.0	4.0	4.0	4.0				
Lead/Lag			Lead	Lead			Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Vehicle Extension (s)			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode			None	C-Min	None	None	None	None	None	C-Min
Walk Time (s)			7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)			16.0	20.0	20.0	20.0			21.0	14.0
Pedestrian Calls (#/hr)			0	0	0	0			0	0

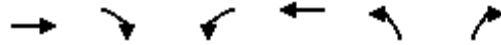
Intersection Summary

Area Type: Other
 Cycle Length: 155
 Actuated Cycle Length: 155
 Offset: 3 (2%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 125
 Control Type: Actuated-Coordinated

Splits and Phases: 10: CC St & Lewis River Rd (SR 503)



HCM Signalized Intersection Capacity Analysis Projected 2025 With Project - Industrial Park
 10: CC St & Lewis River Rd (SR 503) PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↵	↑↑	↵	↵
Traffic Volume (vph)	825	310	95	450	210	115
Future Volume (vph)	825	310	95	450	210	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3370		1787	3471	1752	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3370		1787	3471	1752	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	842	316	97	459	214	117
RTOR Reduction (vph)	23	0	0	0	0	90
Lane Group Flow (vph)	1135	0	97	459	214	27
Heavy Vehicles (%)	3%	2%	1%	4%	3%	2%
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	3 4 6		5	2	8	
Permitted Phases						8
Actuated Green, G (s)	100.7		13.3	27.4	29.0	29.0
Effective Green, g (s)	100.7		13.3	27.4	29.0	29.0
Actuated g/C Ratio	0.65		0.09	0.18	0.19	0.19
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2189		153	613	327	296
v/s Ratio Prot	c0.34		0.05	c0.13	c0.12	
v/s Ratio Perm						0.02
v/c Ratio	0.52		0.63	0.75	0.65	0.09
Uniform Delay, d1	14.3		68.5	60.5	58.4	52.1
Progression Factor	0.46		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1		8.3	8.2	4.7	0.1
Delay (s)	6.8		76.8	68.7	63.0	52.2
Level of Service	A		E	E	E	D
Approach Delay (s)	6.8			70.1	59.2	
Approach LOS	A			E	E	

Intersection Summary			
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	155.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection						
Int Delay, s/veh	4.7					
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	120	0	310	55	0	210
Future Vol, veh/h	120	0	310	55	0	210
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	-	1	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	16	0	6	20	0	8
Mvmt Flow	126	0	326	58	0	221

Major/Minor	Major2	Minor2
Conflicting Flow All	-	0
Stage 1	-	-
Stage 2	-	-
Critical Hdwy	-	-
Critical Hdwy Stg 1	-	-
Critical Hdwy Stg 2	-	-
Follow-up Hdwy	-	-
Pot Cap-1 Maneuver	-	0
Stage 1	-	0
Stage 2	-	0
Platoon blocked, %	-	-
Mov Cap-1 Maneuver	-	-
Mov Cap-2 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-

Approach	SB	NE
HCM Control Delay, s	0	12.9
HCM LOS		B

Minor Lane/Major Mvmt	NELn1	SBT	SBR
Capacity (veh/h)	676	-	-
HCM Lane V/C Ratio	0.327	-	-
HCM Control Delay (s)	12.9	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	1.4	-	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	1	1	115	130	10
Future Vol, veh/h	20	1	1	115	130	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	1	1	125	141	11

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	274	147	152	0	0
Stage 1	147	-	-	-	-
Stage 2	127	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	716	900	1429	-	-
Stage 1	880	-	-	-	-
Stage 2	899	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	715	900	1429	-	-
Mov Cap-2 Maneuver	715	-	-	-	-
Stage 1	879	-	-	-	-
Stage 2	899	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1429	-	722	-	-
HCM Lane V/C Ratio	0.001	-	0.032	-	-
HCM Control Delay (s)	7.5	0	10.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	5	5	115	130	5
Future Vol, veh/h	5	5	5	115	130	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	5	5	125	141	5

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	279	144	146	0	-	0
Stage 1	144	-	-	-	-	-
Stage 2	135	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	711	903	1436	-	-	-
Stage 1	883	-	-	-	-	-
Stage 2	891	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	708	903	1436	-	-	-
Mov Cap-2 Maneuver	708	-	-	-	-	-
Stage 1	879	-	-	-	-	-
Stage 2	891	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1436	-	794	-	-
HCM Lane V/C Ratio	0.004	-	0.014	-	-
HCM Control Delay (s)	7.5	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	5	5	5	110	130	5
Future Vol, veh/h	5	5	5	110	130	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	5	5	120	141	5

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	274	144	146	0	-	0
Stage 1	144	-	-	-	-	-
Stage 2	130	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	716	903	1436	-	-	-
Stage 1	883	-	-	-	-	-
Stage 2	896	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	713	903	1436	-	-	-
Mov Cap-2 Maneuver	713	-	-	-	-	-
Stage 1	879	-	-	-	-	-
Stage 2	896	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1436	-	797	-	-
HCM Lane V/C Ratio	0.004	-	0.014	-	-
HCM Control Delay (s)	7.5	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	3.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	20	95	25	90	135	0
Future Vol, veh/h	20	95	25	90	135	0
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, %	2	2	2	2	2	2
Mvmt Flow	22	103	27	98	147	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	299	147	147	0	0
Stage 1	147	-	-	-	-
Stage 2	152	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	692	900	1435	-	-
Stage 1	880	-	-	-	-
Stage 2	876	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	678	900	1435	-	-
Mov Cap-2 Maneuver	678	-	-	-	-
Stage 1	862	-	-	-	-
Stage 2	876	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	1.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1435	-	852	-	-
HCM Lane V/C Ratio	0.019	-	0.147	-	-
HCM Control Delay (s)	7.6	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Intersection						
Int Delay, s/veh	4.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	100	1	25	35	1	95
Future Vol, veh/h	100	1	25	35	1	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	109	1	27	38	1	103

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	110	0	202
Stage 1	-	-	-	-	110
Stage 2	-	-	-	-	92
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1480	-	787
Stage 1	-	-	-	-	915
Stage 2	-	-	-	-	932
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1480	-	772
Mov Cap-2 Maneuver	-	-	-	-	772
Stage 1	-	-	-	-	915
Stage 2	-	-	-	-	914

Approach	EB	WB	NB
HCM Control Delay, s	0	3.1	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	941	-	-	1480	-
HCM Lane V/C Ratio	0.111	-	-	0.018	-
HCM Control Delay (s)	9.3	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Queuing and Blocking Report
 Projected 2025 With Project - Industrial Park

PM Peak Hour

Intersection: 4: Guild Rd & Schurman Way

Movement	EB	WB	SB	SB
Directions Served	L	TR	L	R
Maximum Queue (ft)	93	28	112	67
Average Queue (ft)	37	4	45	17
95th Queue (ft)	79	18	89	48
Link Distance (ft)		1098		1932
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150		200	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: N Pekin Rd & Guild Rd/W Scott Ave

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	9	104	108
Average Queue (ft)	0	15	47
95th Queue (ft)	4	64	80
Link Distance (ft)	1098	2517	715
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Goerig Rd & N Pekin Rd/Davidson Ave

Movement	EB	WB	NE
Directions Served	TR	LT	LR
Maximum Queue (ft)	10	26	72
Average Queue (ft)	0	1	17
95th Queue (ft)	7	12	49
Link Distance (ft)	2912	793	629
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report
 Projected 2025 With Project - Industrial Park

PM Peak Hour

Intersection: 7: S Pekin Rd/5th St & Davidson Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	26	97	107	66
Average Queue (ft)	1	25	44	27
95th Queue (ft)	11	73	77	55
Link Distance (ft)	793	1220	446	343
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: I-5 SB On-Ramp/Pacific Ave & Goerig St/Lewis River Rd (SR 503)

Movement	EB	EB	EB	WB	WB	WB	SB	SB
Directions Served	L	T	TR	L	T	R	L	T
Maximum Queue (ft)	97	175	552	225	417	136	125	874
Average Queue (ft)	23	132	272	160	170	17	119	558
95th Queue (ft)	62	215	496	247	343	75	143	895
Link Distance (ft)			1848		420	420		1372
Upstream Blk Time (%)					0			
Queuing Penalty (veh)					2			
Storage Bay Dist (ft)	150	150		200			100	
Storage Blk Time (%)		0	18	5	3		48	38
Queuing Penalty (veh)		1	46	24	11		105	123

Intersection: 9: I-5 NB Off-Ramp/Atlantic Ave & Lewis River Rd (SR 503)

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	T	TR	LT	R	L	R
Maximum Queue (ft)	224	360	333	58	69	805	823	92	161
Average Queue (ft)	155	174	202	21	18	767	789	34	60
95th Queue (ft)	242	299	303	51	52	899	806	82	121
Link Distance (ft)		420	420	52	52	769	769		370
Upstream Blk Time (%)		0		2	4	44	82		
Queuing Penalty (veh)		0		7	12	0	0		
Storage Bay Dist (ft)	200							75	
Storage Blk Time (%)	4	5						6	5
Queuing Penalty (veh)	10	9						8	2

Queuing and Blocking Report
 Projected 2025 With Project - Industrial Park

PM Peak Hour

Intersection: 10: CC St & Lewis River Rd (SR 503)

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	13	57	162	175	1470	380	175
Average Queue (ft)	1	50	114	166	876	184	87
95th Queue (ft)	16	69	195	208	1550	317	195
Link Distance (ft)	52	52			1840	809	
Upstream Blk Time (%)	1	21			3		
Queuing Penalty (veh)	4	121			0		
Storage Bay Dist (ft)			150	150			150
Storage Blk Time (%)			5	52	27	19	0
Queuing Penalty (veh)			12	118	86	22	0

Intersection: 11: W Scott Ave & Pacific St/I-5 SB Off Ramp

Movement	NB	SB	NE
Directions Served	L	TR	R
Maximum Queue (ft)	98	13	130
Average Queue (ft)	33	0	61
95th Queue (ft)	76	5	106
Link Distance (ft)	186	1110	2517
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: N Pekin Rd & Site Driveway

Movement	EB
Directions Served	LR
Maximum Queue (ft)	39
Average Queue (ft)	17
95th Queue (ft)	41
Link Distance (ft)	1144
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report
Projected 2025 With Project - Industrial Park

PM Peak Hour

Intersection: 13: N Pekin Rd & Site Driveway

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	30	22
Average Queue (ft)	9	1
95th Queue (ft)	30	10
Link Distance (ft)	989	227
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: N Pekin Rd & Site Driveway

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	30	6
Average Queue (ft)	7	0
95th Queue (ft)	29	4
Link Distance (ft)	998	356
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: N Pekin Rd & Site Driveway

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	69	33
Average Queue (ft)	38	3
95th Queue (ft)	62	22
Link Distance (ft)	1516	2912
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
Projected 2025 With Project - Industrial Park

PM Peak Hour

Intersection: 16: Rose Way & Guild Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	30	61
Average Queue (ft)	2	33
95th Queue (ft)	15	53
Link Distance (ft)	789	1067
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 724

MOVEMENT SUMMARY

Site: 1 [Dike Access Road at Schurman Way (Site Folder: General)]

Projected 2025 with Project - Light Industrial
 PM Peak Hour
 Site Category: (None)
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist] ft				
South: NB Schuman Way														
3	L2	20	6.0	22	6.0	0.856	22.6	LOS D	15.4	392.7	1.00	1.22	1.67	31.0
8	T1	60	0.0	66	0.0	0.856	16.5	LOS D	15.4	392.7	1.00	1.22	1.67	31.1
18	R2	675	3.0	742	3.0	0.856	16.7	LOS D	15.4	392.7	1.00	1.22	1.67	30.3
Approach		755	2.8	830	2.8	0.856	16.8	LOS B	15.4	392.7	1.00	1.22	1.67	30.4
East: WB Dike Access Road														
1	L2	135	9.0	148	9.0	0.437	10.3	LOS B	3.5	89.5	0.38	0.52	0.38	35.8
6	T1	125	3.0	137	3.0	0.437	4.6	LOS A	3.5	89.5	0.38	0.52	0.38	36.0
16	R2	245	2.0	269	2.0	0.437	4.5	LOS A	3.5	89.5	0.38	0.52	0.38	35.0
Approach		505	4.1	555	4.1	0.437	6.1	LOS A	3.5	89.5	0.38	0.52	0.38	35.4
North: SB Driveway														
7	L2	255	0.0	280	0.0	0.306	11.1	LOS B	1.8	44.5	0.50	0.69	0.50	34.3
4	T1	60	0.0	66	0.0	0.306	5.5	LOS A	1.8	44.5	0.50	0.69	0.50	34.2
14	R2	5	0.0	5	0.0	0.306	5.5	LOS A	1.8	44.5	0.50	0.69	0.50	33.3
Approach		320	0.0	352	0.0	0.306	10.0	LOS A	1.8	44.5	0.50	0.69	0.50	34.3
West: EB Dike Access Road														
5	L2	5	0.0	5	0.0	0.283	12.0	LOS B	1.7	42.4	0.61	0.66	0.61	35.8
2	T1	215	4.0	236	4.0	0.283	6.6	LOS A	1.7	42.4	0.61	0.66	0.61	35.6
12	R2	30	0.0	33	0.0	0.283	6.4	LOS A	1.7	42.4	0.61	0.66	0.61	34.7
Approach		250	3.4	275	3.4	0.283	6.7	LOS A	1.7	42.4	0.61	0.66	0.61	35.5
All Vehicles		1830	2.8	2011	2.8	0.856	11.3	LOS B	15.4	392.7	0.69	0.86	0.97	33.0

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 2 [Dike Access Road at I-5 SB Ramps (Site Folder: General)]

Projected 2025 with Project - Light Industrial
 PM Peak Hour
 Site Category: (None)
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist ft				
East: WB Dike Access Road														
1	L2	95	7.0	102	7.0	0.340	9.8	LOS A	0.0	0.0	0.00	0.46	0.00	37.4
6	T1	350	4.0	376	4.0	0.340	3.8	LOS A	0.0	0.0	0.00	0.46	0.00	37.4
Approach		445	4.6	478	4.6	0.340	5.1	LOS A	0.0	0.0	0.00	0.46	0.00	37.4
North: I-5 SB Off-Ramp														
7	L2	140	6.0	151	6.0	0.284	12.4	LOS B	1.5	39.4	0.56	0.72	0.56	34.9
4	T1	5	20.0	5	20.0	0.284	7.1	LOS A	1.5	39.4	0.56	0.72	0.56	34.6
14	R2	125	3.0	134	3.0	0.284	6.3	LOS A	1.5	39.4	0.56	0.72	0.56	33.9
Approach		270	4.9	290	4.9	0.284	9.5	LOS A	1.5	39.4	0.56	0.72	0.56	34.4
West: EB Dike Access Road														
2	T1	860	3.0	925	3.0	1.058	71.5	LOS F	77.0	1970.2	1.00	2.32	3.96	17.8
12	R2	295	3.0	317	3.0	1.058	71.6	LOS F	77.0	1970.2	1.00	2.32	3.96	17.5
Approach		1155	3.0	1242	3.0	1.058	71.5	LOS E	77.0	1970.2	1.00	2.32	3.96	17.7
All Vehicles		1870	3.7	2011	3.7	1.058	46.8	LOS D	77.0	1970.2	0.70	1.65	2.53	22.0

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: SCJ ALLIANCE | Licence: PLUS / 1PC | Processed: Wednesday, October 4, 2023 1:34:35 PM

Project: N:\Projects\5528 Trammell Crow Company\23-000277 TCC Woodland Industrial\03-Analysis\Operations\RAB\2025 with project-General Light Industrial.sip9

MOVEMENT SUMMARY

Site: 3 [Old Pacific Highway at I-5 NB Ramps (Site Folder: General)]

Projected 2025 with Project - Light Industrial
 PM Peak Hour
 Site Category: (None)
 Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV %	[Total veh/h	HV %				[Veh. veh	Dist ft				
South: I-5 NB Off-Ramp														
3	L2	225	5.0	250	5.0	0.655	33.2	LOS C	7.9	204.4	0.99	1.29	1.78	26.3
8	T1	5	0.0	6	0.0	0.655	26.6	LOS C	7.9	204.4	0.99	1.29	1.78	26.4
18	R2	120	3.0	133	3.0	0.655	27.1	LOS C	7.9	204.4	0.99	1.29	1.78	25.7
Approach		350	4.2	389	4.2	0.655	31.0	LOS C	7.9	204.4	0.99	1.29	1.78	26.1
East: WB Old Pacific Highway														
6	T1	205	4.0	228	4.0	0.413	9.5	LOS A	2.9	75.3	0.82	0.87	0.86	34.8
16	R2	80	3.0	89	3.0	0.413	9.5	LOS A	2.9	75.3	0.82	0.87	0.86	33.8
Approach		285	3.7	317	3.7	0.413	9.5	LOS A	2.9	75.3	0.82	0.87	0.86	34.6
West: EB Dike Access Road														
5	L2	480	3.0	533	3.0	0.793	9.8	LOS A	0.0	0.0	0.00	0.55	0.00	36.6
2	T1	535	4.0	594	4.0	0.793	3.8	LOS A	0.0	0.0	0.00	0.55	0.00	36.5
Approach		1015	3.5	1128	3.5	0.793	6.6	LOS A	0.0	0.0	0.00	0.55	0.00	36.6
All Vehicles		1650	3.7	1833	3.7	0.793	12.3	LOS B	7.9	204.4	0.35	0.76	0.53	33.4

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.

Intersection and Approach LOS values are based on average delay for all movements (v/c not used).

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: SCJ ALLIANCE | Licence: PLUS / 1PC | Processed: Wednesday, October 4, 2023 1:34:36 PM

Project: N:\Projects\5528 Trammell Crow Company\23-000277 TCC Woodland Industrial\03-Analysis\Operations\RAB\2025 with project-General Light Industrial.sip9

Intersection						
Int Delay, s/veh	5.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑	↘		↙	↘
Traffic Vol, veh/h	215	205	70	285	105	20
Future Vol, veh/h	215	205	70	285	105	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	200	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	12	4	11	2	6	17
Mvmt Flow	279	266	91	370	136	26

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	461	0	-	0	1100 276
Stage 1	-	-	-	-	276 -
Stage 2	-	-	-	-	824 -
Critical Hdwy	4.22	-	-	-	6.46 6.37
Critical Hdwy Stg 1	-	-	-	-	5.46 -
Critical Hdwy Stg 2	-	-	-	-	5.46 -
Follow-up Hdwy	2.308	-	-	-	3.554 3.453
Pot Cap-1 Maneuver	1049	-	-	-	231 728
Stage 1	-	-	-	-	761 -
Stage 2	-	-	-	-	424 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1049	-	-	-	170 728
Mov Cap-2 Maneuver	-	-	-	-	295 -
Stage 1	-	-	-	-	559 -
Stage 2	-	-	-	-	424 -

Approach	EB	WB	SB
HCM Control Delay, s	5	0	24.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1049	-	-	-	295	728
HCM Lane V/C Ratio	0.266	-	-	-	0.462	0.036
HCM Control Delay (s)	9.7	-	-	-	27.3	10.1
HCM Lane LOS	A	-	-	-	D	B
HCM 95th %tile Q(veh)	1.1	-	-	-	2.3	0.1

Intersection						
Int Delay, s/veh	5.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	195	120	40	215	150	45
Future Vol, veh/h	195	120	40	215	150	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	7	3	24	2	3	12
Mvmt Flow	250	154	51	276	192	58

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	404	0	705 327
Stage 1	-	-	-	-	327 -
Stage 2	-	-	-	-	378 -
Critical Hdwy	-	-	4.34	-	6.43 6.32
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	-	-	2.416	-	3.527 3.408
Pot Cap-1 Maneuver	-	-	1045	-	401 692
Stage 1	-	-	-	-	728 -
Stage 2	-	-	-	-	691 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1045	-	378 692
Mov Cap-2 Maneuver	-	-	-	-	485 -
Stage 1	-	-	-	-	728 -
Stage 2	-	-	-	-	651 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	18.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	521	-	-	1045	-
HCM Lane V/C Ratio	0.48	-	-	0.049	-
HCM Control Delay (s)	18.1	-	-	8.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	2.6	-	-	0.2	-

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	400	5	5	105	15	5
Future Vol, veh/h	400	5	5	105	15	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	4	20	0	4	0	50
Mvmt Flow	571	7	7	150	21	7

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	578	0	739 575
Stage 1	-	-	-	-	575 -
Stage 2	-	-	-	-	164 -
Critical Hdwy	-	-	4.1	-	6.4 6.7
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	-	-	2.2	-	3.5 3.75
Pot Cap-1 Maneuver	-	-	1006	-	388 438
Stage 1	-	-	-	-	567 -
Stage 2	-	-	-	-	870 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1006	-	385 438
Mov Cap-2 Maneuver	-	-	-	-	385 -
Stage 1	-	-	-	-	567 -
Stage 2	-	-	-	-	863 -

Approach	EB	WB	NE
HCM Control Delay, s	0	0.4	14.8
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	397	-	-	1006	-
HCM Lane V/C Ratio	0.072	-	-	0.007	-
HCM Control Delay (s)	14.8	-	-	8.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection												
Int Delay, s/veh	7.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	290	84	105	75	5	20	20	120	5	35	5
Future Vol, veh/h	15	290	84	105	75	5	20	20	120	5	35	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	21	1	0	3	0	0	0	12	3	0	8	14
Mvmt Flow	20	392	114	142	101	7	27	27	162	7	47	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	108	0	0	506	0	0	905	881	449	973	935	105
Stage 1	-	-	-	-	-	-	489	489	-	389	389	-
Stage 2	-	-	-	-	-	-	416	392	-	584	546	-
Critical Hdwy	4.31	-	-	4.13	-	-	7.1	6.62	6.23	7.1	6.58	6.34
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.62	-	6.1	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.62	-	6.1	5.58	-
Follow-up Hdwy	2.389	-	-	2.227	-	-	3.5	4.108	3.327	3.5	4.072	3.426
Pot Cap-1 Maneuver	1372	-	-	1054	-	-	260	275	608	233	259	918
Stage 1	-	-	-	-	-	-	564	533	-	639	598	-
Stage 2	-	-	-	-	-	-	618	589	-	501	508	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1372	-	-	1054	-	-	189	231	608	137	217	918
Mov Cap-2 Maneuver	-	-	-	-	-	-	189	231	-	137	217	-
Stage 1	-	-	-	-	-	-	552	522	-	626	512	-
Stage 2	-	-	-	-	-	-	477	505	-	341	497	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			5.1			23.2			27.4		
HCM LOS							C			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	410	1372	-	-	1054	-	-	221
HCM Lane V/C Ratio	0.527	0.015	-	-	0.135	-	-	0.275
HCM Control Delay (s)	23.2	7.7	0	-	8.9	0	-	27.4
HCM Lane LOS	C	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	3	0	-	-	0.5	-	-	1.1

Lanes, Volumes, Timings

Projected 2025 With Project - General Light Industrial

8: I-5 SB On-Ramp/Pacific Ave & Goerig St/Lewis River Rd (SR 503)

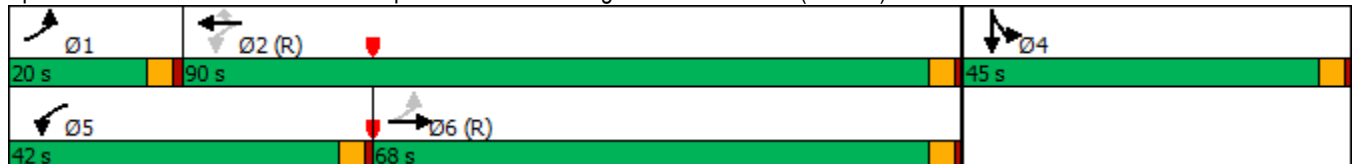
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	420	350	360	455	300	0	0	0	320	245	0
Future Volume (vph)	55	420	350	360	455	300	0	0	0	320	245	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	200		0	0			100		0
Storage Lanes	2		0	1		1	0			1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			30				35
Link Distance (ft)		1913			492			1514				1436
Travel Time (s)		52.2			13.4			34.4				28.0
Turn Type	pm+pt	NA		pm+pt	NA	Perm				Split		NA
Protected Phases	1	6		5	2					4		4
Permitted Phases	6			2		2						
Detector Phase	1	6		5	2	2				4		4
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0				3.0		3.0
Minimum Split (s)	9.0	18.0		9.0	22.0	22.0				32.0		32.0
Total Split (s)	20.0	68.0		42.0	90.0	90.0				45.0		45.0
Total Split (%)	12.9%	43.9%		27.1%	58.1%	58.1%				29.0%		29.0%
Maximum Green (s)	16.0	64.0		38.0	86.0	86.0				41.0		41.0
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0				3.0		3.0
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0				1.0		1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0				0.0		0.0
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0				4.0		4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0				3.0		3.0
Recall Mode	None	C-Max		None	C-Max	C-Max				Min		Min
Walk Time (s)		7.0			7.0	7.0				7.0		7.0
Flash Dont Walk (s)		7.0			11.0	11.0				21.0		21.0
Pedestrian Calls (#/hr)		2			2	2				0		0

Intersection Summary

Area Type: Other
 Cycle Length: 155
 Actuated Cycle Length: 155
 Offset: 0 (0%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green, Master Intersection
 Natural Cycle: 65
 Control Type: Actuated-Coordinated

Splits and Phases: 8: I-5 SB On-Ramp/Pacific Ave & Goerig St/Lewis River Rd (SR 503)



HCM 6th Signalized Intersection Summary Projected 2025 With Project - General Light Industrial
 8: I-5 SB On-Ramp/Pacific Ave & Goerig St/Lewis River Rd (SR 503) PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	420	350	360	455	300	0	0	0	320	245	0
Future Volume (veh/h)	55	420	350	360	455	300	0	0	0	320	245	0
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	1870	1885	1870	1811	1856	1826				1856	1856	0
Adj Flow Rate, veh/h	57	433	361	371	469	0				330	253	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97				0.97	0.97	0.97
Percent Heavy Veh, %	2	1	2	6	3	5				3	3	0
Cap, veh/h	658	1147	951	559	1298					354	371	
Arrive On Green	0.02	0.62	0.62	0.18	1.00	0.00				0.20	0.20	0.00
Sat Flow, veh/h	1781	1857	1541	1725	1856	1547				1767	1856	0
Grp Volume(v), veh/h	57	417	377	371	469	0				330	253	0
Grp Sat Flow(s),veh/h/ln	1781	1791	1608	1725	1856	1547				1767	1856	0
Q Serve(g_s), s	1.8	18.0	18.1	12.7	0.0	0.0				28.5	19.6	0.0
Cycle Q Clear(g_c), s	1.8	18.0	18.1	12.7	0.0	0.0				28.5	19.6	0.0
Prop In Lane	1.00		0.96	1.00		1.00				1.00		0.00
Lane Grp Cap(c), veh/h	658	1106	992	559	1298					354	371	
V/C Ratio(X)	0.09	0.38	0.38	0.66	0.36					0.93	0.68	
Avail Cap(c_a), veh/h	801	1106	992	800	1298					467	491	
HCM Platoon Ratio	1.00	1.00	1.00	1.67	1.67	1.67				1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.83	0.83	0.00				1.00	1.00	0.00
Uniform Delay (d), s/veh	10.3	14.8	14.8	9.0	0.0	0.0				61.0	57.4	0.0
Incr Delay (d2), s/veh	0.1	1.0	1.1	1.1	0.7	0.0				22.1	2.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	7.8	7.1	3.9	0.2	0.0				14.9	9.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.4	15.8	15.9	10.2	0.7	0.0				83.1	59.9	0.0
LnGrp LOS	B	B	B	B	A					F	E	
Approach Vol, veh/h		851			840	A					583	A
Approach Delay, s/veh		15.5			4.9						73.0	
Approach LOS		B			A						E	
Timer - Assigned Phs	1	2		4	5	6						
Phs Duration (G+Y+Rc), s	7.6	112.4		35.0	20.3	99.7						
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0						
Max Green Setting (Gmax), s	16.0	86.0		41.0	38.0	64.0						
Max Q Clear Time (g_c+I1), s	3.8	2.0		30.5	14.7	20.1						
Green Ext Time (p_c), s	0.1	2.2		0.5	1.6	4.1						

Intersection Summary

HCM 6th Ctrl Delay	26.3
HCM 6th LOS	C

Notes

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

Lanes, Volumes, Timings

Projected 2025 With Project - General Light Industrial

9: I-5 NB Off-Ramp/Atlantic Ave & Lewis River Rd (SR 503)

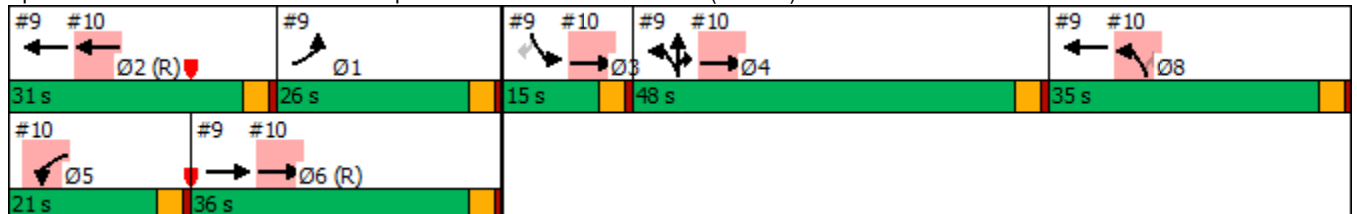
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	195	550	0	0	545	120	400	55	580	35	0	140
Future Volume (vph)	195	550	0	0	545	120	400	55	580	35	0	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		0	0		0	0		0	75		0
Storage Lanes	1		0	0		0	0		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			30			30				35
Link Distance (ft)		492			137			823				446
Travel Time (s)		13.4			3.1			18.7				8.7
Turn Type	Prot	NA			NA		Split	NA	Prot	Prot		Perm
Protected Phases	1	6			2 8		4	4	4	3		
Permitted Phases												3
Detector Phase	1	6			2 8		4	4	4	3		3
Switch Phase												
Minimum Initial (s)	5.0	5.0					5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	9.0	25.0					32.0	32.0	32.0	13.0		13.0
Total Split (s)	26.0	36.0					48.0	48.0	48.0	15.0		15.0
Total Split (%)	16.8%	23.2%					31.0%	31.0%	31.0%	9.7%		9.7%
Maximum Green (s)	22.0	32.0					44.0	44.0	44.0	11.0		11.0
Yellow Time (s)	3.0	3.0					3.0	3.0	3.0	3.0		3.0
All-Red Time (s)	1.0	1.0					1.0	1.0	1.0	1.0		1.0
Lost Time Adjust (s)	0.0	0.0					0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.0	4.0					4.0	4.0	4.0	4.0		4.0
Lead/Lag	Lag	Lag					Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0					3.0	3.0	3.0	3.0		3.0
Recall Mode	None	C-Min					None	None	None	None		None
Walk Time (s)		7.0					7.0	7.0	7.0			
Flash Dont Walk (s)		14.0					21.0	21.0	21.0			
Pedestrian Calls (#/hr)		0					0	0	0			

Intersection Summary

Area Type: Other
 Cycle Length: 155
 Actuated Cycle Length: 155
 Offset: 3 (2%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 125
 Control Type: Actuated-Coordinated

Splits and Phases: 9: I-5 NB Off-Ramp/Atlantic Ave & Lewis River Rd (SR 503)
























Lanes, Volumes, Timings
 9: I-5 NB Off-Ramp/Atlantic Ave & Lewis River Rd (SR 503)

Projected 2025 With Project - General Light Industrial

PM Peak Hour

Lane Group	Ø2	Ø5	Ø8
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Ideal Flow (vphpl)			
Storage Length (ft)			
Storage Lanes			
Taper Length (ft)			
Right Turn on Red			
Link Speed (mph)			
Link Distance (ft)			
Travel Time (s)			
Turn Type			
Protected Phases	2	5	8
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	27.0	9.0	31.0
Total Split (s)	31.0	21.0	35.0
Total Split (%)	20%	14%	23%
Maximum Green (s)	27.0	17.0	31.0
Yellow Time (s)	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag	Lead	Lead	
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0	3.0	3.0
Recall Mode	C-Min	None	None
Walk Time (s)	7.0		7.0
Flash Dont Walk (s)	16.0		20.0
Pedestrian Calls (#/hr)	0		0
Intersection Summary			

HCM Signalized Intersection Capacity Analysis Projected 2025 With Project - General Light Industrial
 9: I-5 NB Off-Ramp/Atlantic Ave & Lewis River Rd (SR 503) PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 								
Traffic Volume (vph)	195	550	0	0	545	120	400	55	580	35	0	140	
Future Volume (vph)	195	550	0	0	545	120	400	55	580	35	0	140	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95			0.95			1.00	1.00	1.00		1.00	
Frt	1.00	1.00			0.97			1.00	0.85	1.00		0.85	
Flt Protected	0.95	1.00			1.00			0.96	1.00	0.95		1.00	
Satd. Flow (prot)	1770	3539			3383			1735	1568	1805		1553	
Flt Permitted	0.95	1.00			1.00			0.96	1.00	0.95		1.00	
Satd. Flow (perm)	1770	3539			3383			1735	1568	1805		1553	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Adj. Flow (vph)	201	567	0	0	562	124	412	57	598	36	0	144	
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	325	0	0	134	
Lane Group Flow (vph)	201	567	0	0	674	0	0	469	273	36	0	10	
Heavy Vehicles (%)	2%	2%	0%	0%	4%	3%	5%	4%	3%	0%	0%	4%	
Turn Type	Prot	NA			NA		Split	NA	Prot	Prot		Perm	
Protected Phases	1	6			2 8		4	4	4	3			
Permitted Phases												3	
Actuated Green, G (s)	23.6	37.7			60.4			44.2	44.2	10.8		10.8	
Effective Green, g (s)	23.6	37.7			60.4			44.2	44.2	10.8		10.8	
Actuated g/C Ratio	0.15	0.24			0.39			0.29	0.29	0.07		0.07	
Clearance Time (s)	4.0	4.0						4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	269	860			1318			494	447	125		108	
v/s Ratio Prot	c0.11	c0.16			c0.20			c0.27	0.17	c0.02			
v/s Ratio Perm												0.01	
v/c Ratio	0.75	0.66			0.51			0.95	0.61	0.29		0.09	
Uniform Delay, d1	62.8	52.9			36.0			54.3	47.9	68.4		67.5	
Progression Factor	0.97	0.97			0.06			1.00	1.00	1.00		1.00	
Incremental Delay, d2	9.3	3.4			0.2			27.8	2.5	1.3		0.4	
Delay (s)	70.4	54.5			2.6			82.1	50.4	69.7		67.9	
Level of Service	E	D			A			F	D	E		E	
Approach Delay (s)		58.7			2.6			64.3			68.3		
Approach LOS		E			A			E			E		
Intersection Summary													
HCM 2000 Control Delay			47.3									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.70										
Actuated Cycle Length (s)			155.0									Sum of lost time (s)	20.0
Intersection Capacity Utilization			71.4%									ICU Level of Service	C
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings
10: CC St & Lewis River Rd (SR 503)

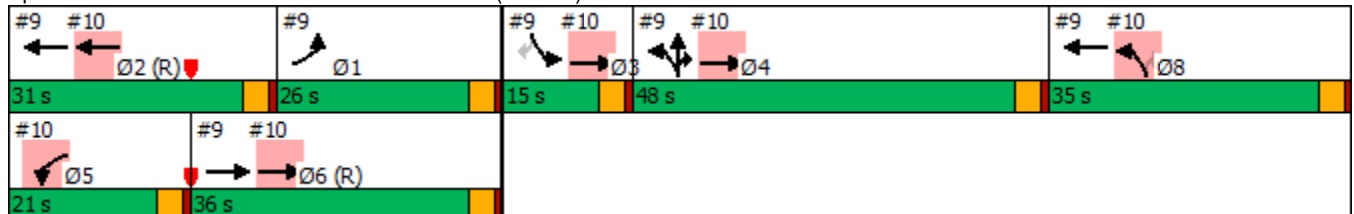
Projected 2025 With Project - General Light Industrial
PM Peak Hour

	→	↘	↙	←	↖	↗				
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø1	Ø3	Ø4	Ø6
Lane Configurations	↑↑		↘	↑↑	↘	↗				
Traffic Volume (vph)	860	310	95	450	210	115				
Future Volume (vph)	860	310	95	450	210	115				
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900				
Storage Length (ft)		0	150		0	150				
Storage Lanes		0	2		1	1				
Taper Length (ft)			25		25					
Right Turn on Red		Yes				Yes				
Link Speed (mph)	25			30	25					
Link Distance (ft)	137			1875	856					
Travel Time (s)	3.7			42.6	23.3					
Turn Type	NA		Prot	NA	Prot	Perm				
Protected Phases	3 4 6		5	2	8		1	3	4	6
Permitted Phases						8				
Detector Phase	3 4 6		5	2	8	8				
Switch Phase										
Minimum Initial (s)			5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)			9.0	27.0	31.0	31.0	9.0	13.0	32.0	25.0
Total Split (s)			21.0	31.0	35.0	35.0	26.0	15.0	48.0	36.0
Total Split (%)			13.5%	20.0%	22.6%	22.6%	17%	10%	31%	23%
Maximum Green (s)			17.0	27.0	31.0	31.0	22.0	11.0	44.0	32.0
Yellow Time (s)			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)			1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)			0.0	0.0	0.0	0.0				
Total Lost Time (s)			4.0	4.0	4.0	4.0				
Lead/Lag			Lead	Lead			Lag	Lead	Lag	Lag
Lead-Lag Optimize?										
Vehicle Extension (s)			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode			None	C-Min	None	None	None	None	None	C-Min
Walk Time (s)			7.0	7.0	7.0	7.0			7.0	7.0
Flash Dont Walk (s)			16.0	20.0	20.0	20.0			21.0	14.0
Pedestrian Calls (#/hr)			0	0	0	0			0	0

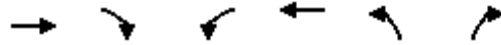
Intersection Summary

Area Type: Other
 Cycle Length: 155
 Actuated Cycle Length: 155
 Offset: 3 (2%), Referenced to phase 2:WBT and 6:EBT, Start of Green
 Natural Cycle: 125
 Control Type: Actuated-Coordinated

Splits and Phases: 10: CC St & Lewis River Rd (SR 503)



HCM Signalized Intersection Capacity Analysis Projected 2025 With Project - General Light Industrial
 10: CC St & Lewis River Rd (SR 503) PM Peak Hour



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↖	↗
Traffic Volume (vph)	860	310	95	450	210	115
Future Volume (vph)	860	310	95	450	210	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3374		1787	3471	1752	1583
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3374		1787	3471	1752	1583
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	878	316	97	459	214	117
RTOR Reduction (vph)	21	0	0	0	0	90
Lane Group Flow (vph)	1173	0	97	459	214	27
Heavy Vehicles (%)	3%	2%	1%	4%	3%	2%
Turn Type	NA		Prot	NA	Prot	Perm
Protected Phases	3 4 6		5	2	8	
Permitted Phases						8
Actuated Green, G (s)	100.7		13.3	27.4	29.0	29.0
Effective Green, g (s)	100.7		13.3	27.4	29.0	29.0
Actuated g/C Ratio	0.65		0.09	0.18	0.19	0.19
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2192		153	613	327	296
v/s Ratio Prot	c0.35		0.05	c0.13	c0.12	
v/s Ratio Perm						0.02
v/c Ratio	0.53		0.63	0.75	0.65	0.09
Uniform Delay, d1	14.6		68.5	60.5	58.4	52.1
Progression Factor	0.46		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2		8.3	8.2	4.7	0.1
Delay (s)	6.9		76.8	68.7	63.0	52.2
Level of Service	A		E	E	E	D
Approach Delay (s)	6.9			70.1	59.2	
Approach LOS	A			E	E	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	155.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th TWSC
 11: W Scott Ave & Pacific St/I-5 SB Off Ramp

Projected 2025 With Project - General Light Industrial
 PM Peak Hour

Intersection						
Int Delay, s/veh	5.5					
Movement	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations						
Traffic Vol, veh/h	120	0	310	60	0	250
Future Vol, veh/h	120	0	310	60	0	250
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	-	1	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	16	0	6	20	0	8
Mvmt Flow	126	0	326	63	0	263

Major/Minor	Major2	Minor2
Conflicting Flow All	-	0
Stage 1	-	-
Stage 2	-	-
Critical Hdwy	-	-
Critical Hdwy Stg 1	-	-
Critical Hdwy Stg 2	-	-
Follow-up Hdwy	-	-
Pot Cap-1 Maneuver	-	0
Stage 1	-	0
Stage 2	-	0
Platoon blocked, %	-	-
Mov Cap-1 Maneuver	-	-
Mov Cap-2 Maneuver	-	-
Stage 1	-	-
Stage 2	-	-

Approach	SB	NE
HCM Control Delay, s	0	13.7
HCM LOS		B

Minor Lane/Major Mvmt	NELn1	SBT	SBR
Capacity (veh/h)	673	-	-
HCM Lane V/C Ratio	0.391	-	-
HCM Control Delay (s)	13.7	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	1.9	-	-

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	70	1	1	120	130	15
Future Vol, veh/h	70	1	1	120	130	15
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, %	2	2	2	2	2	2
Mvmt Flow	76	1	1	130	141	16

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	281	149	157	0	-	0
Stage 1	149	-	-	-	-	-
Stage 2	132	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	709	898	1423	-	-	-
Stage 1	879	-	-	-	-	-
Stage 2	894	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	708	898	1423	-	-	-
Mov Cap-2 Maneuver	708	-	-	-	-	-
Stage 1	878	-	-	-	-	-
Stage 2	894	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.7	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1423	-	710	-	-
HCM Lane V/C Ratio	0.001	-	0.109	-	-
HCM Control Delay (s)	7.5	0	10.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	5	5	5	115	130	5
Future Vol, veh/h	5	5	5	115	130	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	5	5	125	141	5

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	279	144	146	0	-	0
Stage 1	144	-	-	-	-	-
Stage 2	135	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	711	903	1436	-	-	-
Stage 1	883	-	-	-	-	-
Stage 2	891	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	708	903	1436	-	-	-
Mov Cap-2 Maneuver	708	-	-	-	-	-
Stage 1	879	-	-	-	-	-
Stage 2	891	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1436	-	794	-	-
HCM Lane V/C Ratio	0.004	-	0.014	-	-
HCM Control Delay (s)	7.5	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	5	5	5	115	130	5
Future Vol, veh/h	5	5	5	115	130	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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	5	5	125	141	5

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	279	144	146	0	-	0
Stage 1	144	-	-	-	-	-
Stage 2	135	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	711	903	1436	-	-	-
Stage 1	883	-	-	-	-	-
Stage 2	891	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	708	903	1436	-	-	-
Mov Cap-2 Maneuver	708	-	-	-	-	-
Stage 1	879	-	-	-	-	-
Stage 2	891	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1436	-	794	-	-
HCM Lane V/C Ratio	0.004	-	0.014	-	-
HCM Control Delay (s)	7.5	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	5.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	20	205	35	90	135	0
Future Vol, veh/h	20	205	35	90	135	0
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, %	2	2	2	2	2	2
Mvmt Flow	22	223	38	98	147	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	321	147	147	0	0
Stage 1	147	-	-	-	-
Stage 2	174	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	673	900	1435	-	-
Stage 1	880	-	-	-	-
Stage 2	856	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	654	900	1435	-	-
Mov Cap-2 Maneuver	654	-	-	-	-
Stage 1	855	-	-	-	-
Stage 2	856	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.7	2.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1435	-	871	-	-
HCM Lane V/C Ratio	0.027	-	0.281	-	-
HCM Control Delay (s)	7.6	0	10.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.2	-	-

Intersection						
Int Delay, s/veh	6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	100	1	30	35	1	195
Future Vol, veh/h	100	1	30	35	1	195
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	109	1	33	38	1	212

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	110	0	214
Stage 1	-	-	-	-	110
Stage 2	-	-	-	-	104
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1480	-	774
Stage 1	-	-	-	-	915
Stage 2	-	-	-	-	920
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1480	-	756
Mov Cap-2 Maneuver	-	-	-	-	756
Stage 1	-	-	-	-	915
Stage 2	-	-	-	-	899

Approach	EB	WB	NB
HCM Control Delay, s	0	3.5	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	942	-	-	1480	-
HCM Lane V/C Ratio	0.226	-	-	0.022	-
HCM Control Delay (s)	9.9	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.9	-	-	0.1	-

Intersection: 4: Guild Rd & Schurman Way

Movement	EB	EB	WB	SB	SB
Directions Served	L	T	TR	L	R
Maximum Queue (ft)	144	100	54	118	70
Average Queue (ft)	53	3	9	45	15
95th Queue (ft)	106	51	34	92	47
Link Distance (ft)		807	1098		1932
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	150			200	
Storage Blk Time (%)	0				
Queuing Penalty (veh)	1				

Intersection: 5: N Pekin Rd & Guild Rd/W Scott Ave

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	13	93	126
Average Queue (ft)	0	17	56
95th Queue (ft)	7	59	101
Link Distance (ft)	1098	2517	715
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 6: Goerig Rd & N Pekin Rd/Davidson Ave

Movement	WB	NE
Directions Served	LT	LR
Maximum Queue (ft)	43	54
Average Queue (ft)	3	15
95th Queue (ft)	20	44
Link Distance (ft)	793	629
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
 Projected 2025 With Project - General Light Industrial

PM Peak Hour

Intersection: 7: S Pekin Rd/5th St & Davidson Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	51	136	118	66
Average Queue (ft)	3	37	46	29
95th Queue (ft)	25	98	85	57
Link Distance (ft)	793	1220	446	343
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: I-5 SB On-Ramp/Pacific Ave & Goerig St/Lewis River Rd (SR 503)

Movement	EB	EB	EB	WB	WB	WB	SB	SB	B1
Directions Served	L	T	TR	L	T	R	L	T	T
Maximum Queue (ft)	105	175	704	224	441	140	125	1013	7
Average Queue (ft)	24	139	328	172	200	13	118	690	0
95th Queue (ft)	66	218	609	258	399	70	145	1142	5
Link Distance (ft)			1848		420	420		1372	867
Upstream Blk Time (%)					2			1	
Queuing Penalty (veh)					10			0	
Storage Bay Dist (ft)	150	150		200			100		
Storage Blk Time (%)		1	25	10	3		52	43	
Queuing Penalty (veh)		8	65	47	10		126	138	

Intersection: 9: I-5 NB Off-Ramp/Atlantic Ave & Lewis River Rd (SR 503)

Movement	EB	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	T	TR	LT	R	L	R
Maximum Queue (ft)	224	361	322	72	71	806	822	93	127
Average Queue (ft)	163	190	211	25	16	756	786	31	57
95th Queue (ft)	256	302	288	61	49	923	823	73	99
Link Distance (ft)		420	420	52	52	769	769		370
Upstream Blk Time (%)		0	0	4	1	52	75		
Queuing Penalty (veh)		0	0	14	4	0	0		
Storage Bay Dist (ft)	200							75	
Storage Blk Time (%)	9	3						6	5
Queuing Penalty (veh)	25	6						9	2

Queuing and Blocking Report
 Projected 2025 With Project - General Light Industrial

PM Peak Hour

Intersection: 10: CC St & Lewis River Rd (SR 503)

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	27	71	162	175	1133	413	175
Average Queue (ft)	1	50	117	169	664	203	80
95th Queue (ft)	14	72	195	190	1280	358	188
Link Distance (ft)	52	52			1840	809	
Upstream Blk Time (%)	0	23					
Queuing Penalty (veh)	1	136					
Storage Bay Dist (ft)			150	150			150
Storage Blk Time (%)			6	42	27	23	0
Queuing Penalty (veh)			15	95	87	26	0

Intersection: 11: W Scott Ave & Pacific St/I-5 SB Off Ramp

Movement	NB	SB	NE
Directions Served	L	TR	R
Maximum Queue (ft)	98	26	138
Average Queue (ft)	34	1	61
95th Queue (ft)	76	12	101
Link Distance (ft)	186	1110	2517
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 12: N Pekin Rd & Site Driveway

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	62	12
Average Queue (ft)	30	0
95th Queue (ft)	54	6
Link Distance (ft)	1144	367
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: N Pekin Rd & Site Driveway

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	30	6
Average Queue (ft)	9	0
95th Queue (ft)	31	4
Link Distance (ft)	989	227
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 14: N Pekin Rd & Site Driveway

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	35	12
Average Queue (ft)	10	0
95th Queue (ft)	33	6
Link Distance (ft)	998	356
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: N Pekin Rd & Site Driveway

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	83	53
Average Queue (ft)	48	5
95th Queue (ft)	73	28
Link Distance (ft)	1516	2912
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Queuing and Blocking Report
Projected 2025 With Project - General Light Industrial

PM Peak Hour

Intersection: 16: Rose Way & Guild Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	36	75
Average Queue (ft)	4	39
95th Queue (ft)	20	63
Link Distance (ft)	807	980
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 826